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Search time 20.72 Seconds (without alignments) 195.688 Million cell updates,

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166

Title

.... RVEILRNFYFINRLTGYLRN SEQ2-49N-51T 875 1 MSYNLLGFLQRSSNFQCQKL.. score Sequence: Perfect

BLOSUM62 Gapop 10.0 table Scoring

0.5 Gapext

residues 24425594 231628 seqs, Searched

231628 hits satisfying chosen parameters of Total number

seq sed 0B 0B

length: 0
length: 2000000000 Minimum Maximum Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

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No. is the number of results predicted by chance to have a greater than or equal to the score of the result being printed derived by analysis of the total score distribution. 용 . score gand is Pred

SUMMARIES

Description	Appl	tent No. 551	equence 9, Appl	quence 30, App	e 9, Appl	ce 7, Appl	e 7, Appl	No. 551456	ppl	equence 1, Appl	ce 1, Appl	e 1, Appl	equence 3, Appl	ce 22, App	No. 532685	atent No. 551047	equence 16, App	equence 21, App	5, App	equence 26, App	ce 24, App	ce 23, App	ce 5, Appl	7, App	ence 26, App	uence 29, App	,—I
ΙD	US-09-397-992A-7	5514567-4	-09-206-903A-	-08-406-030	-09-202-122-	-09-206-9	-09-206-93	14	0	-08-213-44	-08-912-	T-0S95-032	-912-76	S-08-026-7	26859-	510	-08-362-453-1	-08-026-758-2	-08-026-758-2	-08-026-758-2	-08-026-758-2	-758-2	92A-	-397-992A-2	92A-	-09-397-992A-2	03A-
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RESULT 2 5514567-4 ;Patent No. 5514567 ; APPLICANT: SUGANO, HARUO;MURAMATSU, MASAMI;TANIGUCHI, ;TADATSUGU

Sequence 1, Appli Sequence 1, Appli	equence 2, Appl	Sequence 13, Appl Sequence 86, Appl	6, App	6, App	6, App	7, App	, App	Appl	Sequence 55, Appl	$\mathbf{p}_{\mathbf{l}}$	Sequence 11, Appl	d	4	d	Sequence 1, Appli
US-09-202-122-1 US-09-206-935-1	-09-397-992A-2	8A- 3B-	S-09-339-904A-8	-769-062B-8		-206-9	-206-936-1	US-08-819-238A-1	S-0	US-08-249-671A-5	US-08-249-671A-11	US-08-024-330-1	US-07-952-840-1	US-08-356-021-1	PCT-US94-01729-1
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Pred. No. 7.3e-83;
); Mismatches 2;
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                Sequence 7, Application US/09397992A

Sequence 7, Application US/09397992A

Patent No. 6329175

GENERAL INFORMATION:
APPLICANT: Conklin, Darrell
APPLICANT: Grant, Francis J.
APPLICANT: Rixon, Mark W.
APPLICANT: Kindsvogel, Wayne
TITLE OF INVENTION: Interferon-epsilon
FILE REFERENCE: 98-46
CURRENT APPLICATION NUMBER: 00/101,012
PRIOR APPLICATION NUMBER: 60/101,012
PRIOR FILING DATE: 1998-09-18
PRIOR FILING DATE: 1999-07-05
PRIOR FILING DATE: 1999-07-08
NUMBER OF SEQ ID NOS: 33
SOFTWARE: FastSEQ for Windows Version 3.0
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        -09-397-992A-7
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Matches 164
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LENGTH:
TYPE: PR
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US-08-406-030A-30
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Best Local S
Matches 164
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STATE:
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    INVENTION: DNA AND RECOMBINANT PLASMID
                                                                                                                                                                   Score 863; DB 6;
Pred. No. 7.3e-83;
; Mismatches
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Pred. No. 8.5e-83
); Mismatches
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Sequence 9, App...

Betent No. 6200780

GENERAL INFORMATION:

APPLICANT: Chen, Jian

APPLICANT: Godowski, Paul J.

APPLICANT: Wood, William I.

APPLICANT: Zhang, Dong-Xiao

TITLE OF INVENTION: NOVEL TYPE I INTERFERONS

FILE REFERENCE: P1224-2R1

CURRENT APPLICATION NUMBER: US/09/206,903A

CURRENT FILING DATE: 1998-12-07

PRIOR APPLICATION NUMBER: US 60/106,463

PRIOR FILING DATE: 1998-10-30

withber OF SEQ ID NOS: 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                            INTERFERONS
                                  /08/400,17
TITLE OF INVENTION: DNA AND REC
NUMBER OF SEQUENCES: 5
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/40
FILING DATE: 06-MAR-1995
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 389,922
FILING DATE: 18-JUN-1982
APPLICATION NUMBER: 201,359
FILING DATE: 27-OCT-1980
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Best Local Similarity
Matches 164; Conser
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                                                                                                                                                                                       164;
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Best Local S
Matches 164
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Pred. No. 8
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PRIOR APPLICATION NUMBER
FILTER
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17-MAR-1995
                                                                                                                              Smith
                                                                                                                                                                                                                                                                                                                          FILING DATE: 13-MAY-1994
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                     MBER: US 07/985,586
03-DEC-1992
                                                                                                                                                                                                                                                                                                                                                                                                       INBER: US 07/911,533
                                                                                                                                                                                                                                                                                                                                                                                                                                                  07/787,840
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, Application US/08406030A
6270989
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                                     Treco, Douglas A.
Heartlein, Michael
Hauge, Brian M.
                                                                                                                             Brook,
                                                                                                                                                                                                                                IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME: Granahan, Patricia
REGISTRATION NUMBER: 32,227
REFERENCE/DOCKET NUMBER: TK
TELECOMMUNICATION INFORMATION:
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ilarity 98.8%;
Conservative
                                                                          Richard
                                                                                                                                                                                                    COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
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APPLICATION NUMBER: US 0
FILING DATE: 05-NOV-1991
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ATTORNEY/AGENT INFORMATION:
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R SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       187 amino acids
ino acid
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                                                                                                                                                                                                                                                        SOFTWARE: Patentin ReCURRENT APPLICATION DATA
                                                             APPLICANT: Hauge, Briar
APPLICANT: Selden, Rich
TITLE OF INVENTION: Pro
NUMBER OF SEQUENCES: 36
                                                                                                                                                                                                                                                                                                                 PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR APPLICATION DATA:
                                                                                                                                                                   Massachusetts
                                                                                                                                                                                                                                                                                                                                                                                   FILING DATE: 03-DEC-PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE CHARACTERISTIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               protein
                                                                                                                                                                                                                                                                                 APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER:
Sequence 30, Application Patent No. 6270989
GENERAL INFORMATION:
APPLICANT: Treco, I
                                                                                                                                                                                                                                           OPERATING SYSTEM:
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                                                                                                                                                     Lexington
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164; Conser
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                                                                                                                            ADDRESSEE
                                                 APPLICANT:
APPLICANT:
APPLICANT:
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Mismatches
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Matches 164; Conser
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5514567-1
;Patent No. 5514:
; APPLICANT: 3
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LENGTH: 187
164;
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                     TYPE
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                                                                                                                             APPLICANT: Chen, Jian
APPLICANT: Godowski, Paul
APPLICANT: Godowski, Paul
APPLICANT: Wood, William I.
APPLICANT: Wood, William I.
APPLICANT: Lang, Dong-Xiao
TITLE OF INVENTION: HUMAN INTERFERON-EPSILON:
FILE REFERENCE: P1224R2 (filed)
CURRENT APPLICATION NUMBER: US/09/202,122
CURRENT FILING DATE: 1999-03-04
PRIOR APPLICATION NUMBER: PCT/US98/25672
PRIOR FILING DATE: 1998-12-03
NUMBER OF SEQ ID NOS: 12
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No. 8.5e-83
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No. 8.5e-83
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Pred. No. E
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Pred.
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APPLICANT: Godowski, Paul
APPLICANT: Wood, William I.
APPLICANT: Zhang, Dong-Xiao
TITLE OF INVENTION: NOVEL TYPE I II
FILE REFERENCE: 11669.50US05
CURRENT APPLICATION NUMBER: US/09/CURRENT FILING DATE: 1998-12-07
EARLIER APPLICATION NUMBER: 60/084
NUMBER OF SEQ ID NOS: 24
SOFTWARE: Patentin Ver. 2.0
                                                                                                    Sequence 9, Application US/0920212
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Patent No. 6299877
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                                                                                                               Patent No. 6299869
GENERAL INFORMATION:
APPLICANT: Chen, Ji
APPLICANT: Godowski
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GENERAL INFORMATION:
APPLICANT: Chen, Ji
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19-206-935-7
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ORGANISM: HOMO
-09-202-122-9
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ANT: SUGANO, HARUO;MURAMATSU, MASAMI;TANIGUCHI
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                           Inteferon
                                                                                                                                                                                                                                                                      TITLE OF INVENTION: No. 6300475el Inteferor FILE REFERENCE: P1224R1
CURRENT APPLICATION NUMBER: US/09/206,936A
CURRENT FILING DATE: 1998-12-07
EARLIER APPLICATION NUMBER: US 60/067,897
EARLIER FILING DATE: 1998-12-08
NUMBER OF SEQ ID NOS: 22
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 863;
Pred. No. 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NUMBER OF SEQUENCES: 5
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/400,179
FILING DATE: 06-MAR-1995
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 389,922
FILING DATE: 18-JUN-1982
APPLICATION NUMBER: 201,359
FILING DATE: 27-OCT-1980
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1.2e-82;
   863; DB 6;
No. 8.5e-83;
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RMATION:
    Dorin, Glenn:
    McAlary, Patrick J.
    Wong, Kathleen M.
INVENTION: Bacterial Production of Privention:
    Polypeptides
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             ed. No. 8.5e
Mismatches
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Pred. No. 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: US/08/477,310A FILLING DATE: 06-JUN-1995 CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CLASSIFICATION:
ATTORNEY/AGENT INFORMATION:
NAME: Chung, Ling-Fong
REGISTRATION NUMBER: 36,482
REFERENCE/DOCKET NUMBER: 960.001
TELECOMMUNICATION INFORMATION:
TELEPHONE: (510) 923-2704
   Score Pred.
                                                                                                                                                                                                                        Sequence 1, Application US/08477310A

Sequence 1, Application US/08477310A

Patent No. 5814485

GENERAL INFORMATION:
APPLICANT: Borin, Glenn
APPLICANT: Wong, Kathleen M.
TITLE OF INVENTION: Bacterial Prodition
TITLE OF INVENTION: Polypeptides
NUMBER OF SEQUENCES: 3
CORRESPONDENCE ADDRESS:
ADDRESSEE: Chiron Corporation
STREET: 4560 Horton Street
CITY: Emeryville
STATE: California
COUNTRY: U.S.A.
ZIP: 94608
                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0,
CURRENT APPLICATION DATA:
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illarity 98.8%;
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ilarity 98.2%;
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(510) 655-3542
OR SEQ ID NO: 1
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COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
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nes 163; Conser
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MOLECULE TYPE
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Pred. No. 2.4e-82;
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MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Ve
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/213,448
FILING DATE:
CLASSIFICATION: 424
ATTORNEY/AGENT INFORMATION:
NAME: Haley Jr., James F
REGISTRATION NUMBER: B179
TELECOMMUNICATION INFORMATION:
TELEFAX: (212) 596-9090
                                                                                                                                                                                                                                     Sequence 1, Application US/08213448
; Patent No. 5545723
; GENERAL INFORMATION:
; APPLICANT: Goelz, Susan E
APPLICANT: Cate, Richard L
APPLICANT: Cate, Richard L
APPLICANT: Chow, Pingchang E
TITLE OF INVENTION: No. 5545723el Mu
NUMBER OF SEQUENCES: 4
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SSEE: James F. Haley, Jr.
Fish & Neave, 1251 Avenue
New York
New York
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US-08-912-768-1
; Sequence 1, Application US/08912768
; Sequence 1, Application US/08912768
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163; Conser
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INFORMATION FOR SEQ
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HYPOTHETICAL:
ANTI-SENSE: N
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Pred. No. 2.4e-82
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                                                     Of
                                                                                                                                                                       COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version
                                                                                                          the
APPLICANT: Goelz, Susan E
APPLICANT: Cate, Richard L
APPLICANT: Pepinsky, Blake R
APPLICANT: Chow, Pingchang E
TITLE OF INVENTION: No. 6127332el Muteins NUMBER OF SEQUENCES: 5
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        d. No. 2.4 Mismatches
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PCT-US95-03206-1

Sequence 1, Application PC/TUS9503206

GENERAL INFORMATION:

APPLICANT: Biogen, Inc.
APPLICANT: Goelz, Susan E

APPLICANT: Cate, Richard L

APPLICANT: Cate, Richard E

TTLE OF INVENTION: Novel Muteins O:

NUMBER OF SEQUENCES: 4

CORRESPONDENCE ADDRESS:
                                                                                            Haley, Jr.
e, 1251 Avenue
                                                                                                                                                                                                                                         RRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/912,768
FILING DATE:
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                                                                                                                                                                                                                                                                                                                                                                                    TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 596-9000
TELEFAX: (212) 596-9000
TELEFAX: (212) 596-9000
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 166 amino acids
TYPE: amino acid
STRANDEDNESS: single
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                          08/475,77
                                                                                                                                                                                                                                                                                                                                                                             B179
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ER: 27,794
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98.2%;
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NAME: Haley Jr., James F
REGISTRATION NUMBER: 27,
REFERENCE/DOCKET NUMBER:
                                                                                              F: Fish & Neave, I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       protein
NO
                                                                                                                                                                                                                                                                              CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER:
FILING DATE:
                                                                                            James F
                                                                                                                                  New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        163; Conser
                                                                                                                                                            10020-1104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE:
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ANTI-SENSE: N-08-912-768-1
                                                                                            ADDRESSEE:
                                                                                                                                             COUNTRY:
                                                                                                       STREET:
                                                                                                                                  STATE:
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Best Local S
Matches 163
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Pred. No. 2.4e-82;
                                                                                                                                                        Version #1.2
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US-08-912-768-3
; Sequence 3, Application US/08912768
; Patent No. 6127332
; GENERAL INFORMATION:
; APPLICANT: Goelz, Susan E
; APPLICANT: Cate, Richard L
; APPLICANT: Pepinsky, Blake R
; APPLICANT: Chow, Pingchang E
; TITLE OF INVENTION: No. 6127332el Muteins Of
; NUMBER OF SEQUENCES: 5
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Avenue
                                                                                                                                                                                 PCT/US95/03206
                Avenue
                                                                                             COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0,
CURRENT APPLICATION DATA:
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James F
27,794
B179
   Jr
                                                                                                                                                                                                        CLASSIFICATION:

ATTORNEY/AGENT INFORMATION:

NAME: Haley Jr., James F

REGISTRATION NUMBER: 27,794

REFERENCE/DOCKET NUMBER: B179

TELECOMMUNICATION INFORMATION:

TELEPHONE: (212) 596-9000

TELEFAX: (212) 596-9090

INFORMATION FOR SEQ ID NO: 1:

SEQUENCE CHARACTERISTICS:
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MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
  Haley,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SSEE: James F. Haley,
F: Fish & Neave, 1251
New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        / Match
Local Similarity 98.2%;
nes 163; Conservative
ADDRESSEE: James F. HalsTREET: Fish & Neave, STREET: Americas CITY: New York STATE: New York
                                                                                                                                                                                                                                                                                                                                                    166 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                     protein
NO
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ADDRESSEE: James F.
                                                                                                                                                                                APPLICATION NUMBER: FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                 TYPE: amino acid
STRANDEDNESS: si
                                                                                                                                                                                                                                                                                                                                                                                            linear
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                                                                    tY: USA
10020-1104
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ANTI-SENSE:
PCT-US95-03206-1
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CITY: N
STATE:
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Best Local S
Matches 163
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Suite
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Pred. No. 2.8e-82
              Version
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                                                                                                                                                                                                                                                                                                                                             ed. No. 2.8
Mismatches
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                                      US/08/912,768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0,
OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: Patentin Release #1.0, CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 22, Application US/08026758; Sequence 22, Application US/08026758; Patent No. 5780021; GENERAL INFORMATION:
APPLICANT: SOBEL, DOUGLAS O.
TITLE OF INVENTION: A METHOD FOR TELL OF INVENTION: DISEASES USING NUMBER OF SEQUENCES: 26; CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION DATA:
                                                                                         08/475,774
                                                                                                                                           27,794
sR: B179
                                                                                                                            NAME: Haley Jr., James F
REGISTRATION NUMBER: 27,794
REFERENCE/DOCKET NUMBER: B179
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 596-9090
INFORMATION FOR SEQ ID NO: 3:
SEQUENCE CHARACTERISTICS:
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TELECOMMUNICATION INFORMATION:
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ilarity 98.2%;
Conservative
                                                                                                                  ATTORNEY/AGENT INFORMATION
                                                                                                                                                                                                                                    187 amino acids
amino acid
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                                                                          PRIOR APPLICATION DATA:
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ADDRESSEE: P.C.
STREET: 1755 S.
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Best Local Similarity
Matches 163; Conser
                                                   FILING DATE:
CLASSIFICATION:
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5326859-1
; Patent No. 5326859
; TITLE OF INVENTION: DNA AND RECOMNINANT PLASMID
; TITLE OF SEQUENCES: 3
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/06/201,359
FTLING DATE: 27-OCT-1980
                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                    HLKRYYGRILHYLKAKEYSHCAWTIVRVEILRNFYFINRLTGYLRN 166
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                                                                                                                                                                                      ore 855; DB 1;
ed. No. 5.9e-82;
Mismatches 3
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Pred. No. 5.1e-81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                              "Hu-IFN-beta"
                                                                                                                                                                                       Score
Pred.
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TELEFAX: (703) 413-3000
TELEX: 248855 OPAT UR
INFORMATION FOR SEQ ID NO: 22:
SEQUENCE CHARACTERISTICS:
LENGTH: 187 aming TYPE: aming TYPE:
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ilarity 97.0%;
Conservative
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98.28;
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                                                                                                                       NAME/KEY: Protein
LOCATION: 22..187
OTHER INFORMATION:
IS-08-026-758-22
                                                                                                                                                                                       Query Match
Best Local Similarity
Matches 163; Conser
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Best Local S
Matches 161
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(c) 1993
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mode1 **3** using search, protein OM protein

Search time 51.64 Seconds (without alignments) 357.054 Million cell u •• :39:04 75 2002, 29 July on:

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.. RVEILRNFYFINRLTGYLRN

SEQ2-49N-518 874

MSYNLLGFLQRSSNFQCQKL. score: Sequence: Title: Perfect

0.5 Gapext BLOSUM62 Gapop 10.0 table: Scoring

residues 111073796 seds, 747574 Searched

74757 hits satisfying chosen parameters of Total number

2000000000 length: length: seq seq 03 03 Minimum Maximum

Post-processing:

summaries 0% 100% 45 St Minimum Match Maximum Match Listing first

Databas

A_Geneseq_032802:*

| SIDS1/gcgdata/hold-geneseq/geneseqp-embl/AA1980.DAT:*
| SIDS1/gcgdata/hold-geneseq/geneseqp-embl/AA1981.DAT:*
| SIDS1/gcgdata/hold-geneseq/geneseqp-embl/AA1982.DAT:*
| SIDS1/gcgdata/hold-geneseq/geneseqp-embl/AA1984.DAT:*
| SIDS1/gcgdata/hold-geneseq/geneseqp-embl/AA1985.DAT:*
| SIDS1/gcgdata/hold-geneseq/geneseqp-embl/AA1986.DAT:*
| SIDS1/gcgdata/hold-geneseqy-embl/AA1986.DAT:*
| SIDS1/gcgdata/hold-geneseq/geneseqp-embl/AA1989.DAT:*
| SIDS1/gcgdata/hold-geneseq/geneseqp-embl/AA1989.DAT:*
| SIDS1/gcgdata/hold-geneseq/geneseqp-embl/AA1999.DAT:*
| SIDS1/gcgdata/hold-geneseq/geneseqp-embl/AA1999.DAT:*

predicted by chance to have a score of the result being printed total score distribution. No. is the number of results greater than or equal to the derived by analysis of the t ່ຫຼ score and 1s Pred

SUMMARIES

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Result		Query				
Ž	Score	Match	Length	DB	ID	Description
; ,	870	99.5		22	AAU00119	Human interferon h
7	864				19	Sequence of interf
æ	864	98.9	166	ဖ	AAP50262	enc
4	864			v	AAP50279	Protein sequence e
S	864			7	AAP61071	on resista
9	864			8	AAP70296	0
7	864		166	19	AAW81774	>
8	864		166	22	AAE10346	Mature human beta-
თ	864		166	22	AAE11979	Human wild-type in
	864	•	166	22	AAU00038	Human interferon b
11	864	•	166	22	AAU00074	

Human INF-beta A-c Human INF-beta B-c Sequence of beta-1 Amino acid sequenc	Histidine tagged-h Sequence of fibrob Human fibroblast i	n fibrobla n interfer n HCMV ind	beta- inter	ΩН	Sequence between t Human interferon b	Human interferon b Human interferon b	feron	interferon	interferon	Human interferon b Human interferon b	Human interferon b	interferon	interferon	Human interieron b Human interferon b	d human	IFN-beta(Phe101). Human interferon b
22 AAB49356 22 AAB49357 6 AAP50261 21 AAY84920		5 AAR569 9 AAW611 0 AAY053	2 AAB497 2 AAB497	1 AAY70 0 AAY25		22 AAU00150 22 AAU00070	2 AAU00	2 AAU00	2 AAU0012		22 AAU00160 3 AAP20049	2 AAU0	~ ~	22 AAU000139	Æ,	16 AAR82607 22 AAU00079
166 166 177 183	83 87 87	87 87 87	87	93 12	99	99 99	99	9 9 9	90	0 0 0	66 87	99	99	0 S 0 Q	99	99
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ALIGNMENTS

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interferon beta; antibody; multiple sclerosis; gene therapy; inflammation; solition; viral hepatitis; cancer; breast cancer; inflammation; s disease; acute myeloid leukaemia; Hodgkin's disease; timmunomodulation; mutant; mutein; Q49N/Q51T.
                                                                                                                                                                  Thr"
                                                                                                                                                    Asn
                                                                                                                                                    with
                                                                                                                                                                  with
                                                                                                                                                   Gln replaced
                                                                                                                                                                  replaced
                                                             Human interferon beta mutant Q49N/Q51T
                                                                                                                                                                  _{\tt Gln}
                                                                                                                             Location/Qualifiers
49
               Æ
                                                                                                                                                 "Wild-type
                                                                                                                                                                  "Wild-type
              166
                                                                                                                                                                                                                               99DK-0001197.
99US-0160782.
99DK-0001691.
2000DK-0000194.
2000DK-0000363.
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               Protein
                                              entry)
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                                             (first
              standard;
                                                                                                                                   Key
Misc-difference
                                                                                                                                                           Misc-difference
                                                                                                                                                                                  WO200115736-A2
                                                                                                                                                                                                                 2000;
                                                                                                                                                                                                                               27-AUG-1999;
21-OCT-1999;
26-NOV-1999;
07-FEB-2000;
07-MAR-2000;
                                                                                                                     sapiens
                                                                                                                                                                                                                                  16-MAY-2001
                                                                                                                                                                                                  08-MAR-2001
                                                                                                   ulcerative
              AAU00119
                             AAU00119
                                                                                            Crohn's
                                                                                                                                                                                                                 25-AUG-
                                                                             Human;
                                                                                     viral
                                                                                                                    Homo
     RESULT
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The sequence represents Human interferon beta mutant Q49N/Q51T. Conjugates of the invention exhibiting interferon beta activity comprise at least one first non-polypeptide group covalently attached to an interferon beta polypeptide, the amino acid sequence of which differs from wild-type human interferon beta in at least one introduced and at least one removed amino acid residue comprising an attachment group for the first non-polypeptide group. The invention also concerns reducing the immunogenicity and/or increasing functional in vivo half-life and/or serum half-life of an interferon beta polypeptide comprising introducing an amino acid residue constituting an attachment
                                                                                                                                                                                                                                                                                                                                                                  group for a first non-polypeptide group into a position exposed at the surface of the protein that does not contain such a group and removing an amino acid residue constituting an attachment group for a first non-polypeptide group. The modified peptide to conjugatic with the non-polypeptide group. The conjugate and a cell culture expressing the mutated polypeptides are useful in the treatment of disease, especially multiple sclerosis, and for treating mammals having circulating antibodies against interferon beta is or ib. DNA encoding also be used to treat viral infections (e.g viral hepatitis), cancer (e.g. breast cancer), inflammation, Crohn's disease, acute myeloid immunomodulation.
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                                                                                                                             treating
                                                               Rasmussen PB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MSYNLLGFLQRSSNFQCQKLLWQLNGRLEYCLKDRMNFDIPEEIKQLQnFSKEDAALTIY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMLQNIFAIFRQDSSSTGWNETIVENLLANVYHQINHLKTVLEEKLEKEDFTRGKLMSSL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The present sequence is not shown in the specification but ad from the human interferon beta sequence given in AAU00038
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       group covalently
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 166;
                                                                                                                           for
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                                                                                                                        A conjugate exhibiting interferon beta activity useful multiple sclerosis comprises a non-polypeptide group coattached to an interferon beta polypeptide -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cancer; tumour
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4.4e-68;
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Mismatches
                                                             Andersen KV,
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Pred. No. 4
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                                                                                                                                                                                       English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   standard; Protein; 166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ó;
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99.4%;
14-APR-2000; 2000DK-0000642
                                                           Schambye HT,
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                              (MAXY-) MAXYGEN APS
                                                                                           2001-218488/22
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les 165; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                166 AA;
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pDM101/trp/beta-1
                                                                                                                                                                                     Claim 39; Page
                                                           Pedersen AH,
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Matches
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                                                                                           WPI;
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The inventors claim a multiclass hybrid interferon polypeptide and a DNA unit having a nucleotide sequence which encodes it. Pref. the DNA unit having a nucleotide sequence which encodes it. Pref. the DNA unit having a nucleotide sequence which encodes it. Pref. the AA sequence consists of alpha and beta interferons. Pref. IF1 is of HulfN-beta-1) (see AAN30155, AAP30227); or (ii) the 1-41 AA seq. of HulfN-alpha-61A (and IF2 is the 43-166 AA seq. of HulfN-beta-1) (see AAN30160, AAP30227); Alternativeley IF1 is the amino terminal end of a beta-IF and IF2 is the carboxy terminal of an alpha-IF (esp. the last) (see AAN30156, AAP30223). In the examples plasmids pGW5 and resp.) (see AAN30156, AAP30223). In the examples plasmids pGW5 and pDMM101/trp/beta-1 and p-alpha-61A were used (see AAN30151, AAN30152, AAN30157). HinfI was used to digest the DNA sequences in the region of significant handicaps (see AAN30153, AAN30154, AAN30158, AAN30159), and the restriction fragments were ligated to form hybrid DNA.
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                                                                                                                                                                                                            Multi:class hybrid interferon poly:peptide(s) - antiviral and cell growth regulatory activities
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   core 864; DB 4; red. No. 1.5e-67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   d. No. 1.5
Mismatches
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                                                                                                                                                                                                                                             English
                                                                                     82US-0340782.
83US-0463574.
85US-0755265.
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ilarity 98.8%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Protein;
                                                                  83WO-0900607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              site of p-beta-1-trp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               entry)
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                                                                                                                                                                                                                                             61pp;
                                                                                                                                                                          1983-723186/30
B; AAN30152.
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164; Conser
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                                                                                     19-JAN-1982;
03-FEB-1983;
15-JUL-1985;
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 sapiens
                                                                18-JAN-1983;
                     WO8302461-A.
                                            21-JUL-1983
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Best Local
Matches 16
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7-DEC-1985;
3-JAN-1985;
5-NOV-1986;
5-AUG-1986;
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Best Local S
Matches 164
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                                                                                                                                                                  Sequence
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                          ĽĎ,
                                           WPI; 198
N-PSDB;
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                                                                                                                                                                                               The inventors claim a process for the prodn. of heterologous polypeptide by transformed bacteria. The pref. promoter-operator is trp which controls expression of structural genes encoding polypeptides of a synthetic pathway forming tryptophan, esp. at a concn. of 5.3T mg/l (T* predetermined turbidity value measured at 680nm, esp. 10-100). The transformed bacteria are esp. E.coli contg. the plasmid p-beta-1-trp. Example 1 concerns the construction of plasmid p-beta-1-trp for the direct expression of IFN-beta under the control of trp promoter-operator.
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0
                                                                                                                                              by transformed bacteria which is consumed during
                                                                                                                                                                                                                                                                                                                      Length 166;
                                                                                                                                                                                                                                                                                                                                                                                                                                HLKRYYGRILHYLKAKEYSHCAWTIVRVEILRNFYFINRLTGYLRN 166
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      interferon-beta
                                                                                                                                                                                                                                                                                                                      Score 864; DB 6;
Pred. No. 1.5e-67
); Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        antitumor;
                                                                                                                                              feron, prodn.
a repressor
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0
                                                                                                                                                                                  English
                                                                                                                                              Polypeptide, esp. interferon, cultured in presence of a rep
                                           82US-0375098
84CA-0445883
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il Similarity 98.8%;
164; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                standard; protein;
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                         82US-0375098
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0B; AANS0289.
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                          05-MAY-1982;
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3-JAN-1984
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                                                                                                 Konrad MW,
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Best Local S
Matches 164
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                                                                                                                                                                                                                                                                                           Sequence
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                                                                                                                            N-PSDB;
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                                                                                                      The sequence encodes a synthetic interferon-beta which has increased biological activity compared to natural IFN-beta, and which is more effective in the treatment of viral or neoplasticises, or immunosuppressed or immunodeficient conditions.
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Pred. No. 1.5e-67
); Mismatches
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ic and immuno-modulatory
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85US-0692596.
86AU-0064846.
86US-0893186.
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                                                                             Modified peptide has residues susceptable to chloramine T and peroxide oxidation replaced with conservative AAs. Mutein is thus resistant to oxidisation. Other proteins which may be similarly rendered resistant include tissue plasminogen activator, colony stimulating factor and human growth factor.
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activity
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                                                                                                                                               Score 864; DB 7;
Pred. No. 1.5e-67
; Mismatches
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98.8%;
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CETUS
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This sequence represents a native human recombinant interferon-beta protein which is mutated into an amino acid having at least one hydroxy group substituted for at least one of Leu5, Phe8, Phe15, Leu47, Phe50, Leu106, Phe111, Leu116, Leu120 and Phe156. Such mutants can be used in medicaments e.g. for treating multiple sclerosis, for in vitro screening assays and for measurement of interferon levels. The mutated protein is
                                                                                                                                                                                                                                                                                                  120
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the region exhibiting biological activities of interferon-beta habeen linked to an N-terminal of the region exhibiting biological activities of interferon-gamma. The antiviral activity of the conjugate was tested using FL cells-sindbis virus system according to the CPE 50 inhibition method. Antiviral activity ranged from 200 U/ml to 18500 U/ml.
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                                                                                                                                                                  Length 166;
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Pred. No. 1.5e
0; Mismatches
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s; measurement;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                               protein;
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multiple sclerosis;
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to treat
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                                                                                                                                                                                                                                                               Human; beta-interferon; INF-beta; immune disease; demyelinating sub-acute sclerosing panencephalomyelitis; SSPE; multiple sclerometachromatic leukodystrophy; Guillain-Barre syndrome;
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        864; DB 19
No. 1.5e-67
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                                                                                                                                                                                       AAE10346 standard; Protein; 166
                                                                                                                                                                                                                                             beta-interferon
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        98.98;
98.88;
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2000US-0246089
                                                                                                                                                                                                                            entry)
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07-NOV-2000;
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                  Local
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                                                                                                                                                                                                                                              Mature
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               to the lung and circulatory
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 alpha; FSH;
                                                                                                                                                                                          120
                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human; interferon-gamma; IFNG; interferon-beta; interferon alpha; FS follicle stimulating hormone; granulocyte colony stimulating factor; G-CSF; interleukin 10; IL-10; medicament; pulmonary administration; circulatory administration.
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                                                                                             DAALTIY
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  166
                                                                              MSYNLLGFLQRSSNFQCQKLLWQLNGRLEYCLKDRMNFDIPEEIKQLQnFsKE
                                         Indels
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from a nebulizer
ore 864; DB
ed. No. 1.5e
Mismatches
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Pred.
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2000US-190844P.
2000WO-DK00471.
2000WO-DK00631.
  98.98;
98.88;
                                                                                                                                                                                                                                                                                                                                                               Protein;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Human wild-type interferon
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                                                                                                                                                                                                                                                                                                                                                                                                                                          entry)
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inhalation, e.c
                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Page 136;
                                                                                                                                                                                                                                                                                                                                                                                                                                    (first
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                     Similarity
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5-MAR-2000;
5-AUG-2000;
3-NOV-2000;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    circulatory
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                                                                                                                                                                                                                                                                                                                                       sclerosis; gene therapy; preast cancer; inflammation;
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               Gaps
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                                      MSYNLLGFLQRSSNFQCQKLLWQLNGRLEYCLKDRMNFDIPEEIKQLQnFsKEDAALTIY
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                                                                                                                                                                                                                                                                                                                                                               disease;
              Indels
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                                                                                                                                                                                                                                                                                                                                     Human; interferon beta; antibody; multiple sclerosis; viral infection; viral hepatitis; cancer; breast cancerochn's disease; acute myeloid leukaemia; Hodgkin's dulcerative colitis; immunomodulation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ပ်
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   .. 0
 1.5e-67
 Pred. No. 1.5
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          English
                                                                                                                                                                                                                                 standard; Protein; 166
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99US-0160782.
99DK-0001691.
2000DK-0000194.
2000DK-0000363.
larity 98.8%;
Conservative
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B; AAS00067.
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 Similarity
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1-OCT-1999;
5-NOV-1999;
7-FEB-2000;
7-MAR-2000;
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           164;
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expressing the ase, especially
non-polypeptide group. The conjugate and a cell culture expressing the mutated polypeptides are useful in the treatment of disease, especially multiple sclerosis, and for treating mammals having circulating antibodies against interferon beta la or 1b. DNA encoding the mutated proteins may be used for gene therapy. The DNA and proteins can also be used to treat viral infections (e.g viral hepatitis), cancer (e.g. breast cancer), inflammation, Crohn's disease, acute myeloid leukaemia, Hodgkin's disease and ulcerative colitis and for immunomodulation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                    interferon beta; antibody; multiple sclerosis; gene therapy; infection; viral hepatitis; cancer; breast cancer; inflammation; s disease; acute myeloid leukaemia; Hodgkin's disease; timmunomodulation; mutent; mutein; Q49K.
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Pred. No. 1.5e-67;
; Mismatches 2;
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99US-0160782.
99DK-0001691.
2000DK-0000194.
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98.88;
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                                                                                                                                                                                                                                                                                                                                                                                                           entry)
                                                                                                                                      Query Match
Best Local Similarity 98.8
Matches 164; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note-
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                                                                                                      166 AA;
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21-OCT-1999;
26-NOV-1999;
07-FEB-2000;
07-MAR-2000;
14-APR-2000;
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Human INF-beta
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    <del>ب</del>;
                                                                                                                                Disclosure;
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Best Local S
Matches 164
     Bentzien
                                                                                                                                                                                                                                                                                                                                        Sequence
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                         The sequence represents Human interferon beta mutant Q49K.

Conjugates of the invention exhibiting interferon beta activity

comprise at least one first non-polypeptide group covalently attached

to an interferon beta polypeptide, the amino acid sequence of which

differs from wild-type human interferon beta in at least one introduced

cdiffers from wild-type human interferon beta in at least one introduced

cdiffers from wild-type human interferon beta proceduced

cdiffers from wild-type human interferon beta polypeptide

cdiffers from wild-type human interferon beta polypeptide

comprising the immunogenicity and/or increasing functional in vivo

half-life and/or serum half-life of an interferon beta polypeptide

comprising introducing an amino acid residue constituting an attachment

group for a first non-polypeptide group into a position exposed at the

surface of the protein that does not contain such a group and removing

an amino acid residue constituting an attachment group for a first

non-polypeptide group. The conjugate and a cell culture

expressing the mutated polypeptides are useful in the treatment of

disease, especially multiple scierosis, and for treating mammals having

circulating antibodies against interferon beta la or lb. DNA encoding the

disease, especially multiple scierosis, and for treating mammals can

circulating antibodies against interferon beta la or lb. DNA encoding the

mutated proteins may be used for gene therapy. The DNA and proteins can

close used to treat viral infections (e.g viral hepatitis), cancer

lenamental, Hodghin's disease and ulcerative colitis and for

lenamental, Hodghin's disease and ulcerative colitis and for
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beta sequence given in AAU00038
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 166;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ore 864; DB 22;
ed. No. 1.5e-67;
Mismatches 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                multiple sclerosis;
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Pred. No. 1
0; Mismatch
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English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      standard; Protein; 166
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98.88;
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108pp;
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11;
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(IFN-beta) activity. These analogues are produced so that they are less than 97% identical to human IFN-beta. They are useful in the treatment of multiple sclerosis, cancer, particularly osteosarcoma, basal cell carcinoma, cervical dysplasia, glioma, acute myeloid leukaemia, multiple myeloma, Hodgkin's disease, melanoma, and renal, liver and breast cancers, viral infections, including those caused by hepatitis viruses, herpes viruses and papilloma viruses, viral encephalitis, cytomegalovirus pneumonia and prophylaxis of rhinovirus, idiopathic pulmonary fibrosis and inflammatory diseases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                infection;
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treatment
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                               Novel interferon-beta activity (IbA) proteins which have stability than interferon-beta (IFN-beta) useful for the IFN-beta related disorders such as multiple sclerosis -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (IbA) proteins which have (IFN-beta) useful for the as multiple sclerosis -
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Pred. No. 1.5e
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164; Conserv
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             The present invention provides proteins which have interferon-beta (IEN-beta) activity. These analogues are produced so that they are lest than 97% identical to human IFN-beta. They are useful in the treatment multiple sclerosis, cancer, particularly osteosarcoma, basal cell carcinoma, cervical dysplasia, glioma, acute myeloid leukaemia, multiple myeloma, Hodgkin's disease, melanoma, and renal, liver and breast cancers, viral infections, including those caused by hepatitis viruses herpes viruses and papilloma viruses, viral encephalitis, cytomegaloving pneumonia and prophylaxis of rhinovirus, idiopathic pulmonary fibrosis and inflammatory diseases.
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                                                                                                                                                                   claim a process for the prodn. of heterologous transformed bacteria. The pref. promoter-operator
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                                                                                                                                                                                                                                                                                                                                                         transformed bacteria
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                                                                                                                                             .. 2
                                                                                                                                    Score 864; DB 22;
Pred. No. 1.5e-67;
; Mismatches 2
                                                                                                                                                                                                                                                                                                                                                         trp promoter-operator;
                                                                                                                                                                                                                                                                                                                                         (beta-IFN)
       109pp; English
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98.88;
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84CA-0445883
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       Fig 1B;
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les 164; Conser
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3-JAN-1984;
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                                                                                                                                                                                              Gaps
trp which controls expression of structural genes encoding polypeptides of a synthetic pathway forming tryptophan, esp. at a concn. of 5.3T mg/l (T= predetermined turbidity value measured at 680nm, esp. 10-100). The transformed bacteria are esp. E.coli contg the plasmid p-beta-l-trp. Example 1 concerns the construction of plasmid p-beta-l-trp for the direct expression of IFN-beta under the control of trp promoter-operator.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        New glycosylated interferon-beta-la coupled to a non-naturally occurring polymer containing a polyalkylene glycol useful for trea e.g. tumors, autoimmune disorders, viral infections and angiogenic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  polyalkylene glycol; tumo
lupus; multiple sclerosis;
                                                                                                                                                                                                                                                                                 EMLQNIFAIFRQDSSSTGWNETIVENLLANVYHQINHLKTVLEEKLEKEDFTRGKLMSSL
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                                                                                                                                                               Length 177
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Mismatches
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                                                                                                                                                              Score 864;
Pred. No. 1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
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                                                                                                                                                                                                                                                                                                                                                                                                                                              standard; Protein; 183
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ilarity 98.8%;
Conservative
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"His
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)B; AAA15062.
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disease; ang
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Misc-difference
                                                                                                                  177
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6-FEB-1999;
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The present sequence represents a His-tagged interferon beta la

(IFN-betala) protein. The protein is used to produce a composition

comprising a glycosylated IFN-beta coupled to a non-naturally-occurring

polymer containing a polyalkylene glycol. The composition has enhanced

activity, measured by an antiviral assay, as compared to physiologically

active IFN-beta. The polymer-IFN-betala conjugate has the ability to

stay in the vasculature for longer periods of time, has increased

stay in the vasculature for longer periods of time, has increased

stay in the vasculature for longer periods of time, has increased

stay in the vasculature for longer periods of time, has increased

stay in the vasculature for longer periods of time, has increased

stay in the vasculature stability. The polymer-based conjugates are useful

in increased thermal stability. The polymer-based conjugates are useful

for treating tumors and cancer, as well as autoimmune conditions such

as fibrosis, lupus and multiple sclerosis. These may also be used in the treatment of angiogenic

diseases. IFN-betala is useful as an agent for the treatment, remission

or attenuation of a disease state, physiological condition, symptoms or

etiological factors, or for their evaluation or diagnosis. The IFN-betala

condition or disease state for which the IFN-betala constituent is

efficacious, in biological systems or specimens.
                                                                                                                                                                                                                                                                                    Fig 10; 73pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       183 AA;
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ö Length 183; Indels Score 864; DB 21; Pred. No. 1.6e-67;); Mismatches 2; ö 98.98; 98.88; Conservative Similarity Query Match Best Local Sim Matches 164;

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15:41:34; Search time 46.62 Seconds (without alignments) 615.984 Million cell updates/sec

Title: Perfect score:

....RVEILRNFYFINRLTGYLRN 166 SEQ2-49N-51S 874 1 MSYNLLGFLQRSSNFQCQKL.. Sequence:

Scoring table:

BLOSUM62 Gapop 10.0 , Gapext 0.5

562222 seqs, 172994929 residues Searched:

562222 hits satisfying chosen parameters: Total number of

seq length: 0 seq length: 2000000000 Minimum DB Maximum DB

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

Database

SPTREMBL_19:*

1: sp_archea:*
2: sp_bacteria:*
4: sp_human:*
5: sp_invertebrate:*
6: sp_mammal:*
7: sp_mhc:*
8: sp_organelle:*
9: sp_phage:*
10: sp_phage:*
11: sp_rodent:*
12: sp_virus:*
13: sp_virus:*
14: sp_unclassified:*
15: sp_rvirus:*
16: sp_bacteriap:*
17: sp_archeap:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

	Description	7812 macaca fa	1594	412 sus scr	9gll5 bos tau	1461	96ki6 homo sa	28844	95178	95177	14607 home	9g11	13168 home	2884	28562 ovis	2854	1463
SUMMARIES	ID	778	1594	029412	9GL	146	Q96KI6	288	950	95J	146	9GL	1316	2884	28	2854	1463
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Length 187;

Score 822; DB 6; Pred. No. 2e-63;

94.18; 92.88;

Query Match Best Local Similarity

9myk6 bos taurus 95ne2 bos taurus 28843 oryctolagus 28847 oryctolagus 28847 oryctolagus 29085 sus scrofa 29084 sus scrofa 29084 sus scrofa 29098 sus scrofa 09es91 marmota m 90mj3 homo sapies 900w0 homo sapies 900w0 homo sapies 901719 mus muscu 099n22 marmota m 061719 mus muscu 099n22 marmota m 061718 sus scrofa 091wx3 sigmodon	nlub equus 9228 odocot 61716 mus m 61717 mus m 9pwi5 gallu 9rlt0 mus m
195 6 Q9MYK6 195 6 Q95NE2 195 6 Q28843 195 6 Q28847 190 6 Q29085 179 6 Q29084 190 6 Q29084 190 11 Q9ES91 190 11 Q9ES91 190 11 Q61719 190 11 Q61718 190 11 Q61718 190 11 Q61718 190 11 Q61718	08 6 Q9NIU 66 6 P7922 90 11 Q617 36 11 Q617 93 13 Q9PW 82 11 Q9R1 93 13 Q9PW
236.5 236.5 235 235 235 235 226.9 223.5 226.9 223.5 226.9 221.5 226.9 221.5 225.8 221.5 220.2 219 22.9 219 24.9 201 25.3 209 24.9 201 23.0 198 22.7 197.5 209 23.9 201 23.0 194 22.2 193.5 20.5	88 21. 87 21. 86 21. 81 20. .5 17.
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ALIGNMENTS

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"The human fibroblast and human immune interferon yeues ".;
expression in homologous and heterologous cells.";
expression in homologous and heterologous cells.";
Philos. Trans. R. Soc. Lond., B, Biol. Sci. 299:29-38(1982)
Philos. Trans. R. Soc. Lond., B, Biol. Sci. 299:29-38(1982)
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Catarrhini; Hominidae;
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HSSP; P01574; 1AU1.
InterPro; IPR000471; Interferon_abd.
Pfam; PF00143; Interferon; 1.
PRINTS; PR00266; INTERFERONAB.
ProDom; PD000550; Interferon_abd; 1.
SMART; SM00076; IFabd; 1.
PROSITE; PS00252; INTERFERON_A_B_D; UNKNOWN_1.
Antiviral; Cytokine; Signal.
SIGNAL 1 21 POTENTIAL.
CHAIN 22 187 INTERFERON-BETA.
SEQUENCE 187 AA; 22251 MW; D8EE65B694862061
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DBEE65B694862061
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3., Devos R., Cheroutre H.,
7e W.M., Stanssens P., Tave
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Pred. No. 5
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Q15943;
Q15943;
Q15943;
Q1-943;
Q1-NOV-1996 (TrEMBLrel. 01, Las 01-DEC-2001 (TrEMBLrel. 19, Las INTERFERON-BETA PRECURSOR. Homo sapiens (Human).
Eukaryota; Metazoa; Chordata; Camamalia; Eutheria; Primates; Camamalia; Eutheria; Primates; Camamalia; Eutheria; Primates; Camamalia;
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ilarity 94.6%;
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Conservative
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MEDLINE-83065590; Pul
Fiers W., Remaut E.,
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Gheysen D.,
154;
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interferon-beta.";
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Eute]
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora;
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                                                                                                                                                                                                                                                                                                                   1992).
INTERFERON ALPHA, BETA
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INTERFERON-BETA-1.
SF16B8B3C3AE603D CRC64
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Cetartiodactyla; Suina; Suidae
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Pred. No. 7.1e-38;
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01-NOV-1996 (TrEMBLrel. 01, Created)
01-NOV-1996 (TrEMBLrel. 01, Last sequence upda 01-JUN-2001 (TrEMBLrel. 17, Last annotation uprinterFeron-BETA-1 PRECURSOR.
Sus scrofa (Plg).
Eukaryota; Metazoa; Chordata; Craniata; Verteb.
Mammalia; Eutheria; Cetartiodactyla; Suina; Su
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                                                                                                                                                               SEQUENCE FROM N.A.
Artursson K., Gobl A., Lindersson M., Jo
Submitted (FEB-1992) to the EMBL/GenBank
[2]
SEQUENCE FROM N.A.
MEDLINE-92348930; Pubmed-1640116;
Artursson K., Gobl A., Lindersson M., Jc "Molecular cloning of a gene encoding pc J. Interferon Res. 12:153-160(1992).
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ProDom; PD000550; Interferon_abd;
SMART; SM00076; IFabd; 1.
Antiviral; Cytokine; Signal.
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SEQUENCE FROM N.A
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S68999; AAC60525.2;
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IFNA2.
Homo sapiens (Hum
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01-DEC-2001
01-DEC-2001
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SEQUENCE
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THE INTERFERON ALPHA, BETA AND DELTA
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Y.A., I
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                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
Gren E.Y., Berzin V.M., Tsimanis A.Y., Apsalon U.R., V
Yansone I.V., Dishler A.V., Pudova N.V., Smorodintsev
Iovlev V.I., Stepanov A.N., Feldmane G.Y., Meldrais Y.
Kavsan V.M., Efimov V.A., Sverdlov E.D.;
"A new type of leukocytic interferon.";
Dokl. Biochem. 269:91-95(1983).
-!- SIMILARITY: BELONGS TO THE INTERFERON ALPHA, BETA
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                                                                                  CRC64
                                                                                                                                                                                                                                                                                                                                              Craniata; Vertebrata;
Catarrhini; Hominidae;
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62;
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                                                                                                         Score 255.5; DB (
Pred. No. 1.4e-14,
30; Mismatches 5(
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Pfam; PF00143; interferon; 1.
PRINTS; PR00266; INTERFERONAB.
ProDom; PD000550; Interferon_abd; 1
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                                               Interferon_abd;
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EMBL; AF238613; AAG14170.1; -.
HSSP; P01563; 2HIE.
InterPro; IPR000471; Interferon_a
Pfam; PF00143; Interferon; 1.
PRINTS; PR00266; INTERFERONAB.
ProDom; PD0000550; Interferon_abd;
SMART; SM00076; IFabd; 1.
PROSITE; PS00252; INTERFERON_A_B_
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Mammalia; Eutheria; Primates;
NCBI_TaxID=9606;
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HSSP; P01563; 2HIE.
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                                                                       Cytokine.
195 AA; 2
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189 AA;
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53; Conserv
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Homo sapiens (Huma
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Q14618;
01-NOV-1996
01-NOV-1996
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SEQUENCE
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PROSITE; PS
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Homo.
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Q28844;
Q1-NOV-1996 (TrEMBLrel. 01, Created)
O1-NOV-1996 (TrEMBLrel. 10, Last annotation update)
O1-DEC-2001 (TrEMBLrel. 19, Last annotation update)
INTERFERON-OMEGA48.
Oryctolagus cuniculus (Rabbit).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Eut
Mammalia; Eutheria; Lagomorpha; Leporidae; Oryctolagus.
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9BAA221D2BFB421D CRC64
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Catarrhini; Hominidae;
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MEDLINE=94132653; PubMed=8301151;
Charlier M., L'Haridon R., Boisnard M., Martal J.
"Cloning and structural analysis of four genes er omega in rabbit.";
J. Interferon Res. 13:313-322(1993).
-: SIMILARITY: BELONGS TO THE INTERFERON ALPHA,
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Pred. No. 9.7e-14;
5; Mismatches 53;
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TISSUE=PLACENTA;
MEDLINE=98357449; PubMed=9694076;
MEDLINE=98357449; Carbuccia N., Maroc
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Austruy E., Bagnis C., Carbuccia N., .....

Mannoni P., Chabannon C.;

"A defective retroviral vector encoding hu transduce human leukemic cell lines.";

Cancer Gene Ther. 5:247-256(1998).

EMBL; Y11834; CAA72532.1; -.

POTENTIAL.
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                                                          159 YSPCAWEVVRAEIMRSFSFSTNLOKGLR
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Eukaryota; Metazoa; Chordata; C:
Mammalia; Eutheria; Primates; C:
NCBI_TaxID=9606;
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Platyrrhini; Callitrichidae; Saguinu:
NCBI_TaxID=9490;
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Pred. No. 1.3e-13;
29; Mismatches 65
                                                                                               Score 245; DB 6;
Pred. No. 1.1e-13
); Mismatches 5:
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"Recombinant cotton-top tamarin interferon:
hepatitis model.";
Submitted (OCT-1999) to the EMBL/GenBank/DDE
EMBL; AJ250195; CAC44124.1; -.
                                                                                                                                                                                                                                                                189
HSSP; P01563; 2HIE.
InterPro; IPR000471; Interferon_abd.
Pfam; PF00143; interferon; 1.
PRINTS; PR00266; INTERFERONAB.
ProDom; PD000550; Interferon_abd; 1.
SMART; SM00076; IFabd; 1.
PROSITE; PS00252; INTERFERON_A_B_D; 1
Antiviral; Cytokine.
SEQUENCE 195 AA; 21981 MW; D4D2E3
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Q1-DEC-2001 (TrEMBLrel. 19,
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INTERFERON-ALPHA PRECURSOR.
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Platyrrhini; Callitrichidae; Saguinus
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                                                                                                                                                                                                                Palombo F., a new tool
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                                                                                                                                                                                                                                                                                                                             INTERFERON-ALPHA.
9E4389CFEC329DBA CRC64
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; Hominidae;
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on update)
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                                                                                                                                                                                                                                                                                                                                                                                           Score 242; DB 6
Pred. No. 2e-13;
; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 activity
s induced
                                                                                                                                                                                                               Ceccacci A., Aurisicchio L., Ciliberto G., F. Recombinant cotton-top tamarin interferon:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-NOV-1996 (TrEMBLrel. 01, Created)
01-NOV-1996 (TrEMBLrel. 01, Last sequence up
01-JUN-2001 (TrEMBLrel. 17, Last annotation
INTERFERON-ALPHA-J1 (IFN-ALPHA-J1).
Homo sapiens (Human).
Eukaryota; Metazoa; Chordata; Craniata; Vert
Mammalia; Eutheria; Primates; Catarrhini; HC
                                                Last sequence up
     Z
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    189
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HSSP; P01563; 2HIE.
InterPro; IPR000471; Interferon_abd.
Pfam; PF00143; interferon; 1.
PRINTS; PR00266; INTERFERONAB.
ProDom; PD000550; Interferon_abd; 1.
SMART; SM00076; IFabd; 1.
PROSITE; PS00252; INTERFERON_A_B_D; 1.
Antiviral; Cytokine.
SEQUENCE 189 AA; 22048 MW; 2AF6F4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               virus
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                                   Created)
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interferon alpha identified in virus
Dev. Biol. 60:111-122(1985).
-!- SIMILARITY: BELONGS TO THE INTER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
MEDLINE-86005847; PubMed-2995168;
Cohen S., Velan B., Grosfeld H.,
Shafferman A.;
                                                                                                                                                                                                                                                                                                                                                                                                                        27;
                                                                                                               Saguinus oedipus (Cotton-top t
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
Q95J77;
Q95J77;
Q1-DEC-2001 (TrEMBLrel. 19, C
01-DEC-2001 (TrEMBLrel. 19, L
01-DEC-2001 (TrEMBLrel. 19, L
INTERFERON-ALPHA PRECURSOR.
IFN-ALPHA.
                                                                                                                                                                                                                                                                                                                                            22052 MW;
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36.08;
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Submitted (OCT-1999) to the
EMBL; AJ250196; CAC44125.1;
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servative
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189
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49; Conserv
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189 AA;
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[1]
SEQUENCE FROM N.A
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2AF6F48447BB72B3 CRC64;

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HSSP;
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                    Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAWNTTLEQLCTGLQQQLEDLDACLGPVMGEKDSDMGRMGPILTVKKYFHDIHVYLKEK
                                      LLWQLNGRLE--YCLKDRMNFDIPEEIKQLQnFSKEDAALTIYEMLQNIFAIFRQDSSST
                                                                          --VLEEKLEKEDFTRGKLMSSLHLKRYYGRIL
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                                                       40 LLAQM-GRISPFSCLKDRHEFRFPEEFDGHQFQKTQAISVLHEMIQQTFNLFSTEDSSA
                                                                                                                                                                                                                                                     Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Cetartiodactyla, Ruminantia, Pecora, Bovoidea
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                  17
 189
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Last sequence update)
Last annotation update)
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Pred. No. 3.3e-13;
                                                                                     • •
Score 241.5; DB 4
Pred. No. 2.2e-13;
; Mismatches 58
                                                                                                              165
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PRODOM; PD000550; Interferon_abd;
SMART; SM00076; IFabd; 1.
Antiviral; Cytokine.
SEQUENCE 195 AA; 22160 MW; 6D
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                   22;
                                                                          GWNETIVENLLANVYHQINHLKT - -
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16,
19,
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27.6%;
|larity 37.4%;
|Conservative
                                                                                                                                                                                                                                                                                                                                                                  AAG14168.1;
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HSSP; P01563; 2HIE.
InterPro; IPR000471; Inter
Pfam; PF00143; interferon;
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Q9GLL6;
Q1-MAR-2001 (TrEMBLrel.
01-MAR-2001 (TrEMBLrel.
01-DEC-2001 (TrEMBLrel.
INTERFERON TAU.
IFN-TAU-C3.
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EYSDCAWEIIRVEMMR
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         Similarity 58; Conser
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51; Conser
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         Local
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Q13168;
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Matches
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interferon
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                                                                     Euteleostom1;
                                                                                                                                                       expression
                                                                                                                                                                                                                           Xu L.;
Submitted (APR-1995) to the EMBL/GenBank/DDBJ databases.
-!- SIMILARITY: BELONGS TO THE INTERFERON ALPHA, BETA AND DELTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AND DELTA
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encoding
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                                                                                                                                                      and
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                                                                     Craniata; Vertebrata; Catarrhini; Hominidae;
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on update)
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Pred. No. 4.8e-13;
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(TrEMBLrel. 01, Created)
(TrEMBLrel. 01, Last sequence update)
(TrEMBLrel. 19, Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Interferon Res. 13:313-322(1993).
SIMILARITY: BELONGS TO THE INTERFERON ALPHA,
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Craniata; Ver
a; Leporidae;
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                                                                                                                                         Hou Y.;
                                                                                                                                                    of the primary gene.";
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MEDLINE=94132653; PubMed=8301151;
Charlier M., L'Haridon R., Boisnard M.,
"Cloning and structural analysis of four
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Created)
                                                                                                                                                                                                                                                                                                                        PRINTS; PR00266; INTERFERONAB.
ProDom; PD000550; Interferon_abd; 1
SMART; SM00076; IFabd; 1.
PROSITE; PS00252; INTERFERON_A_B_D;
Antiviral; Cytokine.
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Chordata; Cr
Lagomorpha;
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20249 MW;
                                                      Homo sapiens (Human).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
                                        INTERFERON OMEGA-1 (FRAGMENT) HOmo sapiens (Human).
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33.8%;
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19,
                                                                                                                     SEQUENCE FROM N.A.
Zeng Q., Li M., Zhou Y., Gu
"The cloning, sequencing of
coli Chinese human IFN-W1 g
Sci. China B. 0:0-0(0).
                                                                                                                                                                                                                                                                            EMBL; U25670; AAA70091.1;
HSSP; P01563; 2HIE.
InterPro; IPR000471; Inter
Pfam; PF00143; interferon;
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2HIE.
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(TrEMBLrel.
(TrEMBLrel.
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Q28845;
Q28845;
O1-NOV-1996 (TrEMBLrel.
O1-DEC-2001 (TrEMBLrel.
INTERFERON-OMEGA45.
Oryctolagus cuniculus (Bukaryota; Metazoa; Chomamalia; Eutheria; Laguncel TaxID=9986;
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P01563;
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|-NOV-1996
|-NOV-1996
|-DEC-2001
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Best Local S
Matches 46
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SEQUENCE
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SEQUENCE
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Q28545;
Q1-NOV-1996
Q1-NOV-1996
Q1-DEC-2001
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SIGNAL
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Best Local S
Matches 49
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SEQUENCE
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                                                                                                                                                                                                  VYHQINHLKTVLEEKLEKEDFTRGKLMSSLHLKRYYGRILHYLKAKEYSHCAWTIVRVEI
                                                                                                                                                                                                             CLKDRMNFDIPEEIKQLQnFsKEDAALTIYEMLQNIFAIFRQDSSSTGWNETIVENLLAN
                                                                                                                                                                                                                                                                                                                                                                                               aries (Sheep).
Yota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Alia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea
iae: Caprinae; Ovis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CLKDRMNFDIPEEIKQLQnFsKEDAALTIYEMLQNIFAIFRQDSSSTGWNETIVENLLAN
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                                                                                                            Length 19
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                                                                               CRC64
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3B8EE700C586A928 CRC64
                                                                                                                                                                                                                                                                                                                                                        Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 237; DB 6; Le
Pred. No. 5.5e-13;
                                                                                                                                 55;
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                                                                              395EE700C586A928
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Whaley A.E., Carroll R.S., Imakawa K.; "Cloning and analysis of a gene encoding ovine Gene 106:281-282(1991).
                                                                                                            Score 237; DB 6;
Pred. No. 5.5e-13
20; Mismatches 5
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                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
TISSUE-LIVER;
MEDLINE-92039090; Pubmed-1937057;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       INTERFERON_A_B_D;
ne; Signal.
                                                                                                                                                                                                                                                                                                                                             Created)
InterPro; IPR000471; Interferon_abd
Pfam; PF00143; interferon; 1.
PRINTS; PR00266; INTERFERONAB.
ProDom; PD000550; Interferon_abd; 1
SMART; SM00076; IFabd; 1.
PROSITE; PS00252; INTERFERON_A_B_D;
Antiviral; Cytokine.
SEQUENCE 195 AA; 21996 MW; 395E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL; X59068; CAA41791.1; -.
HSSP; P01563; 2HIE.
InterPro; IPR000471; Interferon_abd
Pfam; PF00143; interferon; 1.
PRINTS; PR00266; INTERFERONAB.
                                                         ä
     Interferon_abd
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                                                                                                                                  20;
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                                                                                                           27.1%;
illarity 39.5%;
Conservative 20
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39.5%;
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SM00076; IFabd;
E; PS00252; INTER
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49; Conserv
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                                                                                                                                                                                                                                                                                                                                                                                                                                 Bovidae; Caprinae;
NCBI_TaxID=9940;
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PRINTS; PROD266;
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Q28562;
O1-NOV-1996
O1-NOV-1996
O1-DEC-2001
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Ovis aries
Eukaryota;
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SIGNAL
CHAIN
SEQUENCE
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Best Local
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PROSITE;
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                                                                                                                                                                                                                                                    INTERFERON TYPE I PRECURSOR.

Ovis aries (Sheep).

Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;

Bovidae; Caprinae; Ovis.

NCBI_TaxID=9940;

[1]

SEQUENCE FROM N.A.

MEDLINE=96219886; PubMed=8639714;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Liu L., Leaman D.W., Bixby J.A., Roberts R.M.;
"A type I ovine interferon with limited similarity to IFN-alpha, omega and IFN-tau: gene structure, biological properties and unuspecies specificity.";
Blochim. Biophys. Acta, Gene Struct. Expr. 1294:55-62(1996).
-1- SIMILARITY: BELONGS TO THE INTERFERON ALPHA, BETA AND DELTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
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INTERFERON TYPE I.
15C4CD45D582F86E CRC64;
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Last sequence update)
Last annotation update)
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Pred. No. 5.5e-13;
); Mismatches 55;
                                                                                                                                                                       A
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HSSP; P01563; 2HIE.
InterPro; IPR000471; Interferon_abd.
Pfam; PF00143; interferon; 1.
PRINTS; PR00266; INTERFERONAB.
ProDom; PD000550; Interferon_abd; 1.
SMART; SM00076; IFabd; 1.
PROSITE; PS00252; INTERFERON_A_B_D; 1.
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39.5%;
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                                                                                                                                                                   PRELIMINARY;
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166 .. RVEILRNFYFINRLTGYLRN SEQ2-49N-51T 875 1 MSYNLLGFLQRSSNFQCQKL. score Sequence:

BLOSUM62 Gapop 10.0 table Scoring

Gapext 0.5 111073796 747574 seqs, Searched

74757 hits satisfying chosen parameters of Total number

residues

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length: 0 length: 2000000000 seq sed 03 08 Maximum

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Minimum Match 0% Maximum Match 100% Listing first 45 summaries

Database

A_Geneseq_032802:*

| SIDS1/gcgdata/hold-geneseq/geneseqp-emb1/AA1980.DAT:*
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RESULT

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SUMMARIES

	Description	Human interferon b	Human interferon b		Ū	enc	Protein sequence e	-0	വ	ativ		Human wild-type in
	ID	AAU00119	AAU00103	AAU00150	AAP30219	AAP50262	AAP50279	AAP61071	AAP70296	AAW81774	AAE10346	AAE11979
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Human interferon b Human interferon b Human INF-beta A-c Human INF-beta B-c Sequence of beta-1 Amino acid sequenc	dine ta ce of f fibrobl fibrob interf	beta-interf interferon interferon- 2/IFN-beta c ce between t interferon		Interferon-beta ge Human interferon b Human interferon b Human interferon b Human interferon b Modified human int
AAU00038 AAU00074 AAB49356 AAB49357 AAP50261 AAY84920	AAY7086 AAP10016 AAP20026 AAR5698 AAW6115	AAE1034 AAB4977 AAY7086 AAY2537 AAF60687 AAU0007	AAU00072 AAU00083 AAU00085 AAU00124 AAU00137 AAU00143 AAU00159	AAP20 AAP20 AAU0 AAU0 AAP50 AAP50 AAR8
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ALIGNMENTS

049N/Q51T AA 166 interferon beta mutant Protein; entry) (first standard; -MAY-2001 AAU00119 AAU00119 Human; Human viral 16 **AAU001**

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interferon beta; antibody; multiple sclerosis; gene therapy; infection; viral hepatitis; cancer; breast cancer; inflammation; s disease; acute myeloid leukaemia; Hodgkin's disease; timmunomodulation; mutant; mutein; Q49N/Q51T. Location/Qualifiers 4 Key Misc-difference sapiens Crohn's disulcerative Homo

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2000WO-DK00471 -AUG-2000; 08-MAR-2001 25

99DK-0001197. 99US-0160782. 99DK-0001691. 2000DK-0000194. 2000DK-0000363. 7-AUG-1999; 1-OCT-1999; 5-NOV-1999; 7-FEB-2000; 7-MAR-2000; 27 21 26 07 07

mutein

mutant;

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ulcerative colitis; immunomodulation; K19R/K45R/Q49K/Q51T/K123R.
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Best I
                                                                                                                                                                    The sequence represents Human interferon beta mutant Q49N/Q51T.

Conjugates of the invention exhibiting interferon beta activity
comprise at least one first non-polypeptide group covalently attached
to an interferon beta polypeptide, the amino acid sequence of which
alfers from wild-type human interferon beta in at least one introduced
and at least one removed amino acid residue comprising an attachment
group for the first non-polypeptide group. The invention also concerns
reducing the immunogenicity and/or increasing functional in vivo
half-life and/or serum half-life of an interferon beta polypeptide
comprising introducing an amino acid residue constituting an attachment
group for a first non-polypeptide group into a position exposed at the
surface of the protein that does not contain such a group and removing
an amino acid residue constituting an attachment group for a first
non-polypeptide group. The conjugate to conjugation
with the non-polypeptide sclerosis, and for treating mammals having
circulating antibodies against interferon beta la or lb. DNA encoding the
mutated proteins may be used for gene therapy. The DNA and proteins can
also be used to treat viral infections (e.g viral hepatitis), cancer
ceg. breast cancer), inflammation, crohn's disease, acute myeloid
leukaemla, Hodgkin's disease and ulcerative colitis and for
when made and a contains and ulcerative colitis and for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
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the
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viral infection; viral hepatitis; cancer; breast cancer; inflammation;
Crohn's disease; acute myeloid leukaemia; Hodgkin's disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
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                                                                                                                                   treating
                                                                  Rasmussen PB;
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                                                                                                                                                     group covalently
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                                                                                                                                 A conjugate exhibiting interferon beta activity useful for multiple sclerosis comprises a non-polypeptide group covale attached to an interferon beta polypeptide -
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                                                                   Andersen KV,
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2000DK-0000642
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165; Conser
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 14-APR-2000;
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                                                                    Pedersen
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disease, acute myelol
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                                                                                                                                                                                                                                                                       Rasmussen
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                                                                                                                                                                                                                                                                                                         sclerosis comprises a non-polypeptide to an interferon beta polypeptide to
                                    replaced
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 mutated proteins may be used for gene therapy. also be used to treat viral infections (e.g vi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ons (e.g
Crohn's
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                   Location/Qualifiers
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                                                      "Wild-type
                                                                                                           "Wild-type
                                                                                          "Wild-type
                                                                       "Wild-type
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                                                                                                                                                                                                                                                                                                                                              English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Hodgkin's disease and
                                                                                                                                                                                   99DK-0001197.
99US-0160782.
99DK-0001691.
2000DK-0000194.
2000DK-0000363.
                                                                                                                                                                   2000WO-DK00471
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                                                                                          'note=
                                                                                                                                                                                                                                                                     Schambye
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Note: The present
derived from the
                          Misc-difference
                                             Misc-difference
                                                               Misc-difference
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                                                                                                                              WO200115736-A2
                                                                                                                                                                                   27-AUG-1999;
21-OCT-1999;
26-NOV-1999;
07-FEB-2000;
07-MAR-2000;
14-APR-2000;
sapiens
                                                                                                                                                                  25-AUG-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      breast
                                                                                                                                                                                                                                                                       Pedersen AH,
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                                                                                                                                                                                                                                                                                                           conjugate
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                                                                                                                                                                                                                                                                                                                   multiple
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Ношо
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Length 166

, DB 22; 4.4e-70;

998 Š.

Score Pred.

99.0%; 98.2%;

Similarity

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Similarity
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                                                                                                                             The present
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pDM101/trp/beta-1
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03-FEB-1983;
15-JUL-1985;
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                                                                                                                                                                                                                                                                                                                                   25-MAY-1992
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Best Local
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                                                                                                                                                                          Human; interferon beta; antibody; multiple sclerosis; gene therapy; viral infection; viral hepatitis; cancer; breast cancer; inflammation Crohn's disease; acute myeloid leukaemia; Hodgkin's disease; ulcerative colitis; immunomodulation; mutant; mutein; S2N/N4T/Q49N/Q51T.
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99US-0160782.
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                                                                                                                     standard;
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                                                                                                                                                                                                                                                                                                                                                                                               (MAXY-) MAXYGEN
                                                                                                                                                                                                                                                      difference
                                                                                                                                                                                                                                  Key
Misc-difference
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21-OCT-1999;
26-NOV-1999;
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14-APR-2000;
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163;
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Matches
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and at least one removed amino acid residue comprising an attachment group for the first non-polypeptide group. The invention also concerns reducing the immunogenicity and/or increasing functional in vivo half-life and/or serum half-life of an interferon beta polypeptide comprising introducing an amino acid residue constituting an attachment group for a first non-polypeptide group into a position exposed at the surface of the protein that does not contain such a group and removing an amino acid residue constituting an attachment group for a first non-polypeptide group. The conjugate and a cell culture with the non-polypeptide group. The conjugate and a cell culture cappressing the mutated polypeptides are useful in the treatment of disease, especially multiple sclerosis, and for treating mammals having circulating antibodies against interferon beta la or lb. DNA encoding the mutated proteins may be used for gene therapy. The DNA and proteins can also be used to treat viral infections (e.g viral hepatitis), cancer (e.g. breast cancer), inflammation, Crohn's disease, acute myeloid leukaemia, Hodgkin's disease and ulcerative colitis and for immunomodulation.
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No. 4.4e-70;
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83US-0463574.
85US-0755265.
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98.8%;
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N-PSDB; AAN30152.
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166 AA;
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N-PSDB;
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                                                                                                                                           DNA unit having a multiclass hybrid interferon polypeptide and a DNA unit having a nucleotide sequence which encodes it. Pref. the As sequence consists of alpha and beta interferons. Pref. IF1 is a sequence consists of alpha and beta interferons. Pref. IF1 is a sequence consists of HulfN-alpha-1 (and IF2 is the 74-166 AA seq. of HulfN-alpha-61A (and IF2 is the 43-166 AA seq. of HulfN-alpha-61A (and IF2 is the 43-166 AA seq. of HulfN-beta-1) (see AAN30160, AAP30227). Alternativeley IF1 is the amino terminal end of a beta-IF and IF2 is the carboxy terminal of an alpha-IF (esp. the 1-73 seq. of HulfN-beta-1 and the 74-167 seq. of HulfN-alpha-1 cep.) (see AAN30156, AAP30223). In the examples plasmids pGW5 and pDM101/trp/beta-1 and p-alpha-61A were used (see AAN30151, AAN30152, AAN30157). HinfI was used to digest the DNA sequences in the region of significant handicaps (see AAN30153, AAN30154, AAN30158, AAN30159), and the restriction fragments were ligated to form hybrid DNA.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
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interferon poly:peptide(s) -
growth regulatory activities
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8.2e-70;
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Mismatches
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98.8%;
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164; Conserv
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                                  The inventors claim a process for the prodn. of heterologous polypeptide by transformed bacteria. The pref. promoter-operator is trp which controls expression of structural genes encoding polypeptides of a synthetic pathway forming tryptophan, esp. at a concn. of 5.3T mg/l (T- predetermined turbidity value measured at 680nm, esp. 10-100); The transformed bacteria are esp. E.coli contg. the plasmid p-beta-1-trp. Example 1 concerns the construction of plasmid p-beta-1-trp for the direct expression of IFN-beta under the control of trp promoter-operator.
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                                                                                                                                                                                                                                                                                                                                                                                              The sequence encodes a synthetic interferon-beta which has increased biological activity compared to natural IFN-beta, and which is more effective in the treatment of viral or neoplastic diseases, or immunosuppressed or immunodeficient conditions.
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Misc-difference
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3-JAN-1985;
5-NOV-1986;
5-AUG-1986;
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                                                   antivirals
activity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The inventors claim an interferon conjugate wherein a C-terminal the region exhibiting biological activities of interferon-beta hubeen linked to an N-terminal of the region exhibiting biological activities of interferon-gamma. The antiviral activity of the conjugate was tested using FL cells-sindbis virus system accordito to the CPE 50 inhibition method. Antiviral activity ranged from 200 U/ml to 18500 U/ml.
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         Length 166;
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B.2e-70;
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Pred. No. 8.2e-70;
Mismatches
                   ed. No. 8.2e
Mismatches
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         Score 863;
Pred. No. 8
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ilarity 98.8%;
Conservative
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                                                                                                                                                                                                                      protein;
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98.88
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                                                                                                                                                                                                                                                                                                                                                                                                 \rightarrow
                                                                                                                                                                                                                                                                                                                                                                                     This sequence represents a native human recombinant interferon-beta protein which is mutated into an amino acid having at least one hydrox group substituted for at least one of Leu5, Phe8, Phe15, Leu47, Phe50, Leu106, Phe111, Leu116, Leu120 and Phe156. Such mutants can be used in medicaments e.g. for treating multiple sclerosis, for in vitro screeni assays and for measurement of interferon levels. The mutated protein in more water-soluble than recombinant wild-type human interferon-beta.
         120
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                                                                                                                                                                                                                                                                                                                          New mutated recombinant human interferon-beta protein contains hydroxylic amino acid substitutions to improve water solubility - used e.g. in in vitro screening assays, to measure interferon level; and to treat multiple sclerosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       screening
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                         166
                                                                                                                                                         treatment;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length
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                        Score 863; DB 19;
Pred. No. 8.2e-70;
; Mismatches 2;
                                                                                                                                                         medicament; t
                                                                                                                                                                                                                                                                        FOERDERUNG ANGEWANDTEN
                                                                                                                                                                                                                                                                                          Waschuetza
                                                                                                                                        protein
                                                                                                                                                         Interferon-Beta; variant; human; multiple sclerosis; measurement;
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                                                                                                                                                                                                                                                                                                                                                                       German
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                                                                                                                                         interferon-beta
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illarity 98.8%;
Conservative
                                                                                     protein;
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                                                                                                                       entry)
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                                                                                    standard;
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                                                                                                                                                                                                                                                                         FRAUNHOFER
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                                                                                                                                        Human native
                                                                                                                                                                                    sapiens
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Matches 164
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AAW8177
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The invention relates to use of nucleic acids expressing human beta-interferon (INF-beta) for the treatment of immune diseases such demyelinating disease (e.g. sub-acute sclerosing panencephalomyelitis (SSPE), metachromatic leukodystrophy, Guillain-Barre syndrome) and autoimmune disease (e.g. multiple sclerosis). The expression of the beta-interferon results in the improvement of the clinical status of the treated mammal, thus avoiding the use of recombinant polypeptide. The nucleic acid is therefore compatible with the quality of life of patients. The present sequence is mature human beta-interferon.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
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                                                                                                                 demyelinating dismultiple sclerosis
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                                                                                                              beta-interferon; INF-beta; immune disease; demy
te sclerosing panencephalomyelitis; SSPE; mult;
omatic leukodystrophy; Guillain-Barre syndrome;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HLKRYYGRILHYLKAKEYSHCAWTIVRVEILRNFYFINRLTGYLRN
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Pred. No. 8.2e-70;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               immune
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                                                                                                                                                                                                                                                 CGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               treatment
                                                                                                                                                                                                               Location/Qualifiers
162
                                                                                                                                                                                                                                              "Encoded by
 166
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                                                                                    human beta-interferon
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illarity 98.8%;
Conservative
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standard; Protein;
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2000US-0246089
                                                          entry)
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N-PSDB; AAD17506.
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Misc-difference
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Page
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07-NOV-2000;
                                                                                                                                                                                                                                                                                                                                      -FEB-2001;
                                                                                                                                                                                          sapiens
                                                                                                                                                                                                                                                                             EP1133997-A2
                                                                                                                                            metachromati
                                                       10-DEC-2001
                                                                                                                                                                                                                                                                                                         19-SEP-2001
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                                                                                                                               sub-acute
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                          AAE10346
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                                                                                    Mature
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(first entry)

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                                                                                                                                                                                                                                                                                                                                         circulatory
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  120
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                                                                                 -beta; interferon alpha; F:
colony stimulating factor
pulmonary administration;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MSYNLLGFLQRSSNFQCQKLLWQLNGRLEYCLKDRMNFDIPEEIKQLQnFtKEDAALTIY
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Pred. No. 8.2e-70;
; Mismatches 2
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                                                                                                                                                                                                                                                                                                                                       for administration . from a nebulizer
                                                                                 ; interferon-
granulocyte
medicament;
                                                              beta
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                                                              (IFN)
166
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                                                                                 Human; interferon-gamma; IFNG; follicle stimulating hormone; G-CSF; interleukin 10; IL-10;
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2000US-190844P.
2000WO-DK00471.
2000WO-DK00631.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               98.6%;
98.8%;
Protein;
                                                                                                                                                                                                  2001WO-DK00182
                                                                                                                circulatory administration.
                                                                                                                                                                                                                                                                                                                                                  e.g.
                                                              wild-type interferon
                                                                                                                                                                                                                                                                                                                                                                       Page 136; 139pp;
                                          entry
                                                                                                                                                                                                                                                                                                                                       ns of particles
inhalation, e.c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local Similarity 98.8 (es 164; Conservative
                                         (first
                                                                                                                                                                                                                                                                                                                  2001-616274/71
                                                                                                                                                                                                                                                                           AP
standard;
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                                                                                                                                                                                                                                                                          -) MAXYGEN
                                                                                                                                                         WO200168141-A2
                                                                                                                                                                                                                    17-MAR-2000;
20-MAR-2000;
25-AUG-2000;
13-NOV-2000;
                                                                                                                                     Homo saptens
                                                                                                                                                                                                  6-MAR-2001;
                                                                                                                                                                                                                                                                                                                                        Dispersions
                                         -DEC-2001
                                                                                                                                                                              20-SEP-2001
                                                                                                                                                                                                                                                                                               CK.
                                                                                                                                                                                                                                                                                                                                                  aystem by
                                                                                                                                                                                                                                                                                                                                                                      22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Seguence
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AAE11979
                    AAE11979
                                                                                                                                                                                                                                                                                               Hansen
                                                                                                      G-CSE;
                                                                                   Human;
                                                                                                                                                                                                                                                                                                                                                                       Claim
                                                              Human
                                                                                                                                                                                                                                                                           (MAXY
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Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61
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166

AAU00038 standard; Protein;

12

RESULT 1
AAU00038
ID AAU0

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The sequence is Human interferon beta. Conjugates of the invention exhibiting interferon beta activity comprise at least one first non-polypeptide group covalently attached to an interferon beta polypeptide, the amino acid sequence of which differs from wild-type human interferon beta in at least one introduced and at least one removed amino acid residue comprising an attachment group for the first non-polypeptide group. The invention also concerns reducing the immunogenicity and/or increasing functional in vivo half-life and/or serum half-life of an interferon beta polypeptide comprising introducing an amino acid residue constituting an attachment group for a first non-polypeptide group into a position exposed at the surface of the protein that does not contain such a group and removing an amino acid residue constituting an attachment group for a first non-polypeptide group. The conjugate and a cell culture expressing the non-polypeptides are useful in the treatment of disease, especially multiple sclerosis, and for treating mammals having circulating an alticon beta la or 1b. DNA encoding the mutated and a cell culture and a call and a call conjugate and a cell antibodies against interferon beta la or 1b. DNA encoding the mutated and a cell conjugate and a cell antibodies against interferon beta la or 1b. DNA encoding the mutated beta la or 1b. DNA encoding the protein the conjugate and a cell conjugate and
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leukaemia,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   be
                                                                                                                       s sclerosis; gene therapy;
breast cancer; inflammation;
Hodgkin's disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            therapy. The DNA and proteins can also (e.g viral hepatitis), cancer (e.g. Crohn's disease, acute myeloid leukaemi ve colitis and for immunomodulation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Rasmussen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        covalently
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ပဲ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bornaes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ron beta activity
non-polypeptide g
polypeptide -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .;
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                                                                                                                          multiple
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                      ta; antibody; multiple
al hepatitis; cancer;
te myeloid leukaemia;
immunomodulation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            863;
No. 8.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ΚV,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                proteins may be used for gene therapy used to treat viral infections (e.g v breast cancer), inflammation, Crohn's Hodgkin's disease and ulcerative coli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Andersen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       interferon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    sclerosis comprises a
to an interferon beta
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                                                                                                                                                                                                                                                                                                                                                   99DK-0001197.
99US-0160782.
99DK-0001691.
2000DK-0000194.
2000DK-0000363.
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98.88
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                                                                                                                        interferon beta;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         99-100;
                                                                                                                                        viral infection; viral
Crohn's disease; acute
ulcerative colitis; imm
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Schambye
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                                                                                       beta,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2001-218488/22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                       interferon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAS00067
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MAXYGEN
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                                                                                                                                                                                                                                                  WO200115736-A2
                                                                                                                                                                                                                                                                                                                                                   27-AUG-1999;
21-OCT-1999;
26-NOV-1999;
07-FEB-2000;
07-MAR-2000;
14-APR-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AH,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A conjugate multiple sclattached to
                                                                                                                                                                                                                sapiens
                                                                                                                                                                                                                                                                                                                    5-AUG-2000;
                                                                                                                                                                                                                                                                                   08-MAR-2001
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pedersen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Example
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (MAXY-)
                                                                                                                         Human;
                                                                                         Human
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Best Loc
Matches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                having
  120
                           120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           to conjugaticulture
                                                                                                                                                                                                                                         Human; interferon beta; antibody; multiple sclerosis; gene therapy; viral infection; viral hepatitis; cancer; breast cancer; inflammation Crohn's disease; acute myeloid leukaemia; Hodgkin's disease; ulcerative colitis; immunomodulation; mutant; mutein; Q49K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ul for treating covalently
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           an amino acid residue constituting an attachment group for a first non-polypeptide group and subjecting the modified peptide to conjugath the non-polypeptide group. The conjugate and a cell culture
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   of
treating mammals
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Rasmussen
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q49K
                                                                           166
                                                                                                                                                                                                                                                                                                                                                           Gln replaced with Lys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                useful
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             group
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         represents Human interferon beta mutant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ပဲ
                                                               HLKRYYGRILHYLKAKEYSHCAWTIVRVEILRNFYFINRLTGYLRN
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ste exhibiting interferon beta activity sclerosis comprises a non-polypeptide cto an interferon beta polypeptide -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  useful
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ΚV,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    are
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                sclerosis,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Andersen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 expressing the mutated polypeptides disease, especially multiple scleros
                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
                                                                                                                                         AA
                                                                                                                                                                                                                                                                                                                                                         "Wild-type
                                                                                                                                                                                                                   Q49K
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                108pp; English
                                                                                                                                         Protein; 166
                                                                                                                                                                                                                                                                                                                                                                                                                                                           99DK-0001197.
99US-0160782.
99DK-0001691.
2000DK-0000194.
2000DK-0000363.
2000DK-0000642.
                                                                                                                                                                                                                   beta mutant
                                                                                                                                                                                                                                                                                                                                                                                                                                     2000WO-DK00471
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                                                                                                                                                                                           entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Schambye
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                                                                                                                                                                                         (first
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                                                                                                                                        standard;
                                                                                                                                                                                                                                                                                                                                              49
                                                                                                                                                                                                                   interferon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MAXYGEN
                                                                                                                                                                                                                                                                                                                                              Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Page
                                                                                                                                                                                                                                                                                                                                                                                  WO200115736-A2
                                                                                                                                                                                                                                                                                                         sapiens
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                                                                                                                                                                                                                                                                                                                                                                                                                                     25-AUG-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AH,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A conjugate
multiple scl
attached to
                                                                                                                                                                                                                                                                                                                                                                                                                                                           7-AUG-1999;
1-OCT-1999;
6-NOV-1999;
7-FEB-2000;
7-MAR-2000;
                                                                                                                                                                                         16-MAY-2001
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pedersen
                                                                                                                                        AAU00074
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (MAXY-)
                                                                                                                                                                                                                    Human
                                                                                                               13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim
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61
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                                                                                                                                                                                                                                                                                                           Homo
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28
27
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                  can
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Interferon-beta activity; multiple sclerosis; cancer; viral infection;
  encoding
                                                                                                                                                                                                                                                                              120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    of
circulating antibodies against interferon beta la or 1b. DNA encodin mutated proteins may be used for gene therapy. The DNA and proteins also be used to treat viral infections (e.g viral hepatitis), cancer (e.g. breast cancer), inflammation, Crohn's disease, acute myeloid leukaemia, Hodgkin's disease and ulcerative colitis and for immunomodulation.
                                                                                                                                                                              Gaps
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                                                                            1.S
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treatment
                                                                          shown in the specification but
beta sequence given in AAU00038
                                                                                                                                                                                                   EMLONIFAIFRODSSSTGWNETIVENLLANVYHQINHLKTVLEEKLEKEDFTRGKLMSSL
                                                                                                                                                                                                                                                                 ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Novel interferon-beta activity (IbA) proteins which have stability than interferon-beta (IFN-beta) useful for the IFN-beta related disorders such as multiple sclerosis -
                                                                                                                                                                            Indels
                                                                                                                                                    Length
                                                                                                                                                                                                                                                                                                      166
                                                                                                                                                                                                                                                                                                                               166
                                                                                                                                                                                                                                                                                                                  HLKRYYGRILHYLKAKEYSHCAWTIVRVEILRNFYFINRLTGYLRN
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                                                                                                                                                   , DB 22;
8.2e-70;
                                                                                                                                                                   d. No. 8.2
Mismatches
                                                                                                                                                 863;
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N
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Pred.
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                                                                            trom the human interferon
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                                                                                                                                                   98.6%;
larity 98.8%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                            Protein;
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                                                                                                                                                                                                                                                                                                                                                                                                                                             entry)
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                                                                                                                                                               l Similarity
164; Conser
                                                                                                                                                                                                                                                                                                                                                                                            standard;
                                                                                                                AA;
                                                                          The present
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                                                                                                                                                 Ouery Match
Best Local S
Matches 164
                                                                                                                                                                                                                                                                                                                                                                                                                     AAB49356;
                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                                                           AAB49356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          analogue
                                                                                       derived
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The present invention provides proteins which have interferon-beta (IFN-beta) activity. These analogues are produced so that they are lethan 97% identical to human IFN-beta. They are useful in the treatmentaltiple sclerosis, cancer, particularly osteosarcoma, basal cell carcinoma, cervical dysplasia, glioma, acute myeloid leukaemia, multiple sclerosis, viral infections, including those caused by hepatitis viruses therpes viruses and papilloma viruses, viral encephalitis, cytomegalov presumonia and prophylaxis of rhinovirus, idiopathic pulmonary fibrosis
                                                                                                                                 Length 166
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                                                                                                                                                                                                                                                                                                                                 cancer;
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Pred. No. 8.2e-70;
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GenCore version (c) 1993 - 2000
            Copyright
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sw model using - protein search, OM protein

Search time 28.3 Seconds (without alignments) 563.634 Million cell updates : 29 :40 15 2002, 29 July <u>Б</u> Run

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166

.. RVEILRNFYFINRLTGYLRN SEQ2-49N-51S 874 1 MSYNLLGFLQRSSNFQCQKL. score: Sequence: Title: Perfect

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residues 96089334 283138 segs, Searched

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Database

PIR_71:*
1: pir1:*
2: pir2:*
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A; Molecule type: mRNA
A; Molecule type: mRNA
A; Residues: 1-187 < HOUD>
A; Cross-references: GB:J00218; GB:K00616; GB:M11029; NID:g184626; PID:g386802
A; Cross-references: GB:J00218; GB:K00616; GB:M11029; NID:g184626; PID:g386802
B; Houghton, M.; Stewart, A.G.; Doel, S.M.; Emtage, J.S.; Eaton, M.A.W.; Smith, Nucleic Acids Res. 8, 1913-1931, 1980
A; Title: The amino-terminal sequence of human fibroblast interferon as deduced A; Reference number: A93700; MUID:81053854
A; Accession: A93700
A; Molecule type: mRNA
A; Residues: 1-68 < HO2>

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A; Molecule type: DNA
A; Residues: 1-187 <DER>
A; Residues: 1-187 <DER>
A; Cross-references: GB: V00546; NID: g32735; PIDN: CAA23807.1; PID: g32736
A; Cross-references: GB: V00546; NID: g32735; PIDN: CAA23807.1; PID: g32736
R; Houghton, M.; Eaton, M.A.W.; Stewart, A.G.; Smith, J.C.; Doel, S.M.; Cartlin, G.H. Nucleic Acids Res. 8, 2885-2894, 1980
A; Title: The complete amino acid sequence of human fibroblast interferon as deduced A; Reference number: A93706; MUID: 81053720
A; Accession: A93706
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interferon beta-3 precursor - bovine C; Species: Bos primigenius taurus (cattle) C; Date: 15-Nov-1984 #sequence_revision 15-Nov C; Accession: A01841 R; Leung, D.W.; Capon, D.J.; Goeddel, D.V. Bio/Technology 2, 458-464, 1984 A; Title: The structure and bacterial express A; Reference number: A90097
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A; Molecule type: mknn
A; Residues: 1-186 <HIM>
A; Cross-references: GB: M14546; NII
A; Cross-references: interferon alpha
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N; Alternate names: E
C; Species: Equus cab
C; Date: 28-Dec-1987
C; Accession: G24912
R; Himmler, A.; Haupt
DNA 5, 345-356, 1986
A; Title: Molecular c
A; Reference number:
A; Accession: G24912
A; Molecule type: mRN
A; Residues: 1-186 <E
A; Cross-references:
C; Superfamily: inter
C; Keywords: antivira
F; 1-21/Domain: signa
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                                            interferon
                   Nature 249, bub-bu7, 1981

A;Title: Assignment of the disulphide bonds of leukocyte interferc A;Reforence number: A33244; MUTD:81123083

A;Contents: annotation; disulfide bond
R;Shepard, H.M.: Leung, D.; Stebbing, N.; Goeddel, D.V.
Nature 294, 563-565, 1981

A;Title: A single amino acid change in IFN-beta-1 abolishes its an A;Reforence number: A93269; MUID:82080683

A;Accession: A93269

A;Redidues: Tyle: A' 163-187 <SHED
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Pred. No. 3.7e-63;
); Mismatches 2;
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IVBOB2
Interferon beta-2 precursor - bovine
C; Species: Bos primigenius taurus (cattle)
C; Date: 15-Nov-1984 #sequence_revision 15-Nov-1984 #tc
C; Accession: A01840
R; Leung, D.W.; Capon, D.J.; Goeddel, D.V.
Bio/Technology 2, 458-464, 1984
A; Title: The structure and bacterial expression of thu A; Reference number: A90097
A; Reference number: A90097
A; Residues: 1-186 < LEU>
C; Superfamily: interferon alpha
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                                                                                                                                                                                                                                                                                  C; Keywords: glycoprotein
F;1-21/Domain: signal sequence #status predicted <SIG>
F;22-186/Product: interferon beta-2 #status predicted
F;52-161/Disulfide bonds: #status predicted
F;131,173/Binding site: carbohydrate (Asn) (covalent)
                                                                                                                                                                                                                                                                     LKRYYGRILHYLKAKEYSHCAWTIVRVEILRNFYFINRLTGYLR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                <SIG>
                                                                                                                                                                                                                                                                                                                                N; Alternate names: EqIFN-beta-I; type I interferon C; Species: Equus caballus (domestic horse) C; Date: 28-Dec-1987 #sequence_revision 28-Dec-1987 #t. C; Accession: G24912 R; Himmler, A.; Hauptmann, R.; Adolf, G.R.; Swetly, P. DNA 5, 345-356, 1986 A; Title: Molecular cloning and expression in Escherich A; Reference number: A90956; MUID: 87053170 A; Molecule furc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ywords: antiviral; glycoprotein
21/Domain: signal sequence #status predicted <SIG>
-186/Product: interferon beta-I #status predicted
1,136/Binding site: carbohydrate (Asn) (covalent)
                                                                                        Score 482.5; DB 1;
Pred. No. 3.4e-32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    12;
42;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NID:9164228;
                                                                                                                            30;
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interferon-b

distinct bovine

three

of

expression

containing

fragment

chromosomal.

S

PID:951

gene

Taniguchi

.. C

PID:g51539 ; Takaoka, C

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interferon-beta

monse

for

PID:93093

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PIDN:CAA32190.1;
                                                                                                                                                                                                                                                                                                                                                                                                                 PIDN:CAA32625.1;
de, Y.; Ohno, S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PIDN: AAA37891.1;
                                                                                                                                                                                                                                                       interferon-beta
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Pred. No. 2.4e-20;
; Mismatches 59;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Superfamily: interferon alpha
Keywords: glycoprotein
1-21/Domain: signal sequence #status predicted
22-182/Product: interferon beta #status predicted
50,90,97/Binding site: carbohydrate (Asn) (covalen
J. Mol. Biol. 204, 221-231, 1988
A;Title: Structure and characterization of a murine A; Reference number: S02020; MUID:89125582
A; Accession: S02020
A; Molecule type: DNA
A; Residues: 1-182 CVD>A; Residues: 1-182 Cross-references: EMBL:X14029; NID:951550; PIDN:CR R; Kuga, T.; Fujita, T.; Taniguchi, T.
Nucleic Acids Res. 17, 3291, 1989
A;Title: Nucleotide sequence of the mouse interferor A; Reference number: S04201; MUID:89263735
A; Accession: S04201
A; Status: translation not shown
A; Molecule type: DNA
A; Residues: 1-182 CKUG>
A; Residues: 1-182 CKUG>
A; Title: Structure and expression of a cloned cDNA f; Ridgashi, Y.; Sokawa, Y.; Watanabe, Y.; Kawade, Y.; Kawade, Y.; Sokawa, Y.; Watanabe, Y.; Rawade, Y.; Aseidues: 1-182 CKUG>
A; Title: Structure and expression of a cloned cDNA f; Reference number: A01839; MUID:83265757
A; Residues: 1-182 CKUG>
A; Molecule type: mRNA
A; Residues: 1-182 CKUG>
A; Cross-references: GB:K00020; NID:9194113; PIDN:AA/C; Genetics:
C; Superfamily: interferon alpha
C; Superfamily: interferon alpha
C; Superfamily: signal sequence #status predicted
F; 1-21/Domain: signal sequence #status predicted
F; 22-182/Product: interferon beta #status predicted
F; 50,90,97/Binding site: carbohydrate (Asn) (covaler
                                         murine
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Best Local Similarity 45.8%;
Matches 76; Conservative
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                                                                                                                                                                           <MAT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         C; Species: Bos primigentus taurus (cattle)
C; Date: 15-Nov-1984 #sequence_revision 15-Nov-1984 #text_C; Accession: A01842
R; Leung, D.W.; Capon, D.J.; Goeddel, D.V.
Bio/Technology 2, 458-464, 1984
A; Title: The structure and bacterial expression of three A; Reference number: A90097
A; Reference number: A90097
A; Reference number: A90097
A; Reference number: Bollogy
A; Reference number: A90097
C; Superfamily: interferon alpha
C; Superfamily: interferon alpha
C; Superfamily: interferon alpha
C; Superfamily: interferon beta-1 #status predicted <MF; 1-21/Domain: signal sequence #status 
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LGKYYFNLMQYLESKEYDRCAWTVVQVQILTNVSFLMRLTGYVRD
      A; Accession: A01841
A; Molecule type: DNA
A; Residues: 1-186 <LEU>
C; Superfamily: interferon alpha
C; Keywords: glycoprotein
F; 1-21/Domain: signal sequence #status predicted <SIG>
F; 22-186/Product: interferon beta-3 #status predicted
F; 52-161/Disulfide bonds: #status predicted
F; 52-161/Disulfide site: carbohydrate (Asn) (covalent)
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43;
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                                                                                                                                                                                                                                                                                                         Score 451.5; DB Pred. No. 1.1e-29
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                                                                                                                                                                                                                                                                                                                               ed. No. 1.10
Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               erferon beta-1 precursor - bovine
pecies: Bos primigenius taurus (cattle)
ate: 15-Nov-1984 #sequence_revision 15-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        interferon beta precursor - mouse
C; Species: Mus musculus (house mouse)
C; Date: 03-Aug-1984 #sequence_revision
C; Accession: S02020; S04201; A01839
R; Vodjdan1, G.; Coulombel, C.; Doly, J.
                                                                                                                                                                                                                                                                                                                                                       34;
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llarity 52.7%;
Conservative 3
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83; Conserv
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tes 87; Conser
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Length

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120

and growth-inhibitory 302.1; PID:g1616939 and antitumor activities 20-Jun-2000 #text_change ¥ gene interferon beta precursor - rat
C; Species: Rattus norvegicus (Norway rat)
C; Date: 10-Jun-1997 #sequence_revision 18-Jul-1997 #text_cha
C; Accession: JC5424
R; Yokoyama, S.; Ohishi, N.; Shamoto, M.; Watanabe, Y.; Yagi,
Blochem. Biophys. Res. Commun. 232, 698-701, 1997
A; Title: Isolation and expression of rat interferon beta gen.
A; Reference number: JC5424
A; Molecule type: DNA
A; Residues: 1-184 <YOK>
A; Residues: 1-184 <YOK>
A; Cross-references: DDBJ:D87919; NID:g1616938; PIDN:BAA13502.
C; Comment: This protein exhibits characteristic antiviral and
C; Genetics:
A; Gene: IFNbeta
C; Superfamily: interferon alpha
E; 1-21/Domain: signal sequence #status Yagi, 502

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                                                                                             Length
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     F;1-23/Domain: signal sequence #status predicted <SIG>F;24-195/Product: interferon alpha-II-1 #status predicted F;24-122,52-162/Disulfide bonds: #status predicted F;101/Binding site: carbohydrate (Asn) (covalent) #status
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                                                                                          Score 263; DB 1;
Pred. No. 2.4e-14;
; Mismatches 54;
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6.7e-14;
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N; Alternate names: EqIFN-alpha-I-3; type I interfer
C; Species: Equus caballus (domestic horse)
C; Date: 28-Dec-1987 #sequence_revision 28-Dec-1987
C; Accession: C24912
R; Himmler, A.; Hauptmann, R.; Adolf, G.R.; Swetly,
DNA 5, 345-356, 1986
A; Title: Molecular cloning and expression in Eschena, A; Reference number: A90956; MUID:87053170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 257; DB Pred. No. 6.7e B; Mismatches
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larity 40.3%;
Conservative
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Similarity 36.0%;
54; Conservative
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Best Local S
Matches 54
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Best Loc
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                    Gaps
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                                                                                                         EMLQNIFAIFRQDSSSTGWNETIVENLLANVYHQINHLKTVLEEKLEKEDFTRGKLMSSL
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                   3.
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                    Indels
                                                                                                                                                                                                                                                                              NyAlternate names: EqIFN-alpha-II-2; EqIFN-omega-2; type I in C; Species: Equus caballus (domestic horse)
C; Date: 28-Dec-1987 #sequence_revision 28-Dec-1987 #text_chan C; Accession: F24912
R; Himmler, A.; Hauptmann, R.; Adolf, G.R.; Swetly, P.
DNA 5, 345-356, 1986
A; Title: Molecular cloning and expression in Escherichia coli A; Reference number: A90956; MUID:87053170
A; Accession: F24912
A; Molecule type: DNA
A; Residues: 1-195 AIIM>
A; Residues: 1-195 AIIM>
C; Superfamily: interferon alpha
C; Superfamily: interferon alpha
C; Superfamily: interferon alpha-II-2 #status predicted
F; 24-195/Product: interferon alpha-II-2 #status predicted
F; 24-122,52-162/Disulfide bonds: #status predicted
F; 101/Binding site: carbohydrate (Asn) (covalent) #status pre
                                                                                                                                                                   166
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IVH021
interferon alpha-II-1 precursor - horse
N,Alternate names: EqIFN-alpha-II-1; EqIFN-omega-1; type I i
C; Species: Equus caballus (domestic horse)
C; Date: 28-Dec-1987 #sequence_revision 28-Dec-1987 #text_cha
C; Accession: E24912
R; Himmler, A.; Hauptmann, R.; Adolf, G.R.; Swetly, P.
DNA 5, 345-356, 1986
A; Title: Molecular cloning and expression in Escherichia col
A; Reference number: A90956; MUID:87053170
A; Accession: E24912
A; Molecule type: DNA
A; Residues: 1-195 <HIM>
A; Residues: 1-195 <HIM>
C; Superfamily: interferon alpha
C; Superfamily: interferon alpha
C; Keywords: antiviral; glycoprotein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length
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                                                                                                                                                                                terferon alpha-II-2 precursor - horse
Alternate names: EqIFN-alpha-II-2; EqIFN-omega-2; type
Species: Equus caballus (domestic horse)
Date: 28-Dec-1987 #sequence_revision 28-Dec-1987 #text_
                                                                                                                                                                  HLKRYYGRILHYLKAKEYSHCAWTIVRVEILRNFYFINRLTGYLRN
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   1.1e-19,
                 Mismatches
  2
   Pred.
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                23;
45.2%;
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                 Conservative
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   Similarity 75; Conser
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Best Local Similarity
Matches 60; Conser
   Local
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  Best Loc
Matches
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;Superfamily: interferon alpha; Keywords: antiviral; cytokine; leukocyte; 1-23/Domain: signal sequence #status predicted
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A; Residues: 1-189 < TOR>
A; Cross-references: GB:K02055; NID:g184620; PI R; Gren, E.; Berzin, V.M.; Jansone, I.; Tsimani J. Interferon Res. 4, 609-617, 1984 A; Title: Novel human leukocyte interferon subt A; Reference number: 156313; MUID:85056523 A; Reference number: 156313; MUID:85056523 A; Residues: 1-189 < RES>
A; Residues: 1-189 < RES>
A; Residues: 1-189 < RES>
A; Cross-references: GB:M28585; NID:g184643; PI C; Genetics: A; Genetics
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ilarity 36.0%;
Conservative 2
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N; Alternate names: EqIFN-alpha-I-2; type I interferon
C; Species: Equus caballus (domestic horse)
C; Date: 28-Dec-1987 #sequence_revision 28-Dec-1987 #text_change 18-Jun-199
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                                                                                                                          PID:9164223
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Nilternate names: EqIFN-alpha-I-1; type I interferon
C; Species: Equus caballus (domestic horse)
C; Date: 28-Dec-1987 #sequence_revision 28-Dec-1987 #text_chal
C; Accession: A24912
R; Himmler, A.; Hauptmann, R.; Adolf, G.R.; Swetly, P.
DNA 5, 345-356, 1986
A; Title: Molecular cloning and expression in Escherichia col
A; Reference number: A90956; MUID:87053170
A; Accession: A24912
A; Molecule type: DNA
A; Residues: 1-184 
A; Residues: 1-184 
C; Superfamily: interferon alpha
C; Superfamily: interferon alpha
C; Keywords: antiviral
F; 1-23/Domain: signal sequence #status predicted <MAF; 24-184/Product: interferon alpha-I-1 #status predicted
F; 24-122, 52-162/Disulfide bonds: #status predicted
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                                                                                                                            PIDN: AAA30951
A; Accession: C24912
A; Molecule type: DNA
A; Residues: 1-184 <HIM>
A; Residues: 1-184 <HIM>
A; Cross-references: GB:M14542; NID:g164222; PIDN:AAA30953
C; Superfamily: interferon alpha
C; Keywords: antiviral
E; 1-23/Domain: signal sequence #status predicted <SIG>
F; 24-184/Product: interferon alpha-I-3 #status predicted
F; 24-122,52-162/Disulfide bonds: #status predicted
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Pred. No. 6.7e-14.
8; Mismatches 54
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C; Accession: B24912
R; Himmler, A.; Hauptmann, R.; Adolf, G.R.; Swetly, P.
DNA 5, 345-356, 1986
A; Title: Molecular cloning and expression in Escherichia col
A; Reference number: A90956; MUID:87053170
A; Reference number: DNA
A; Molecule type: DNA
A; Residues: 1-184 <HIM>A; Residues: 1-184 <HIM>A; Residues: 1-184 <HIM>Escherichia col
C; Superfamily: interferon alpha
C; Superfamily: interferon alpha
C; Keywords: antiviral
F; 1-23/Domain: signal sequence #status predicted <NA
F; 24-122, 52-162/Disulfide bonds: #status predicted
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A; Residues: 1-189 < HEN>
A; Cross-references: GB: X02957; NID: 932653; PIDN: CAA26703.1;
A; Cross-references: GB: X02957; NID: 932653; PIDN: CAA26703.1;
R; Torczynski, R.M.; Fuke, M.; Bollon, A.P.
Proc. Natl. Acad. Sci. U.S.A. 81, 6451-6455, 1984
A; Title: Human genomic library screened with 17-base oligonu A; Reference number: A22068; MUID: 85038533
A; Accession: A22068
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C; Date: 28-Dec-1987 #sequence_revision 28-Dec-1987
C; Accession: G23753; A22068; I73334
R; Henco, K.; Broslus, J.; Fujisawa, A.; Fujisawa, J. Mol. Biol. 185, 227-260, 1985
A; Title: Structural relationship of human interfer A; Reference number: A92916; MUID: 86037205
A; Accession: G23753
A; Molecule type: DNA
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N;Alternate names: HuIFN-alpha-I-16; interferon
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11: sp_rodent:*
12: sp_virus:*
13: sp_virus:*
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed and is derived by analysis of the total score distribution.

SUMMARIES

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"The human fibroblast and human immune interferon genes and the expression in homologous and heterologous cells.";
Philos. Trans. R. Soc. Lond., B, Biol. Sci. 299:29-38(1982).
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PROSITE; PS00252; INTERFERON_A_B_D; UNKNOWN_1
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"Cloning bovine interferon-tau genes and characterizing
transcriptional expression during early pregnancy.";
Submitted (FEB-2000) to the EMBL/GenBank/DDBJ databases.
-I- SIMILARITY: BELONGS TO THE INTERFERON ALPHA, BETA AN
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Cetartiodactyla; Ruminantia; Pecora
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INTERFERON-BETA-1.
5F16B8B3C3AE603D CRC64
                                                                                                                                                                   Lindersson M., Johansson M., the EMBL/GenBank/DDBJ databa
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.na; Suidae;
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ursson K., Gobl A., Lindersson M., Johansson M., Johansson M., Johansson M., Johansson M., Johansson M., Johansson M., Jecular cloning of a gene encoding porcine intenteron Res. 12:153-160(1992).
SIMILARITY: BELONGS TO THE INTERFERON ALPHA,
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Pred. No. 5e-38;
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                                                                                  Craniata;
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EMBL; S41178; AAB22723.1; -.
HSSP; P01574; 1AU1.
InterPro; IPR000471; Interferon_abd.
Pfam; PF00143; interferon; 1.
PRINTS; PR00266; INTERFERONAB.
ProDom; PD000550; Interferon_abd; 1.
SMART; SM00076; IFabd; 1.
Antiviral; Cytokine; Signal.
                                                                                  Chordata; Crania
Cetartiodactyla;
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21878 MW;
                               01-JUN-2001 (TrEMBLrel. 1/, INTERFERON-BETA-1 PRECURSOR. Sus scrofa (Pig).
Eukaryota; Metazoa; Chordata; Mammalia; Eutheria; Cetartioc NCBI_TaxID=9823;
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INTERFERON TAU.
IFN-TAU-C1.
Bos taurus
Eukar
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Artursson K., Gobl A.
Submitted (FEB-1992)
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Eukaryota; Metazoa; (
Mammalia; Eutheria;
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NCBI_TaxID=9913;
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INTERFERON ALPHA 2 PRECURSOR.
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35.3%;
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01-NOV-1996 (TrEMBLrel. 01,
01-NOV-1996 (TrEMBLrel. 01,
01-DEC-2001 (TrEMBLrel. 19,
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nes 60; Conser
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01-DEC-2001
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01-DEC-2001
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SEQUENCE FROM N.A.

Gren E.Y., Berzin V.M., Tsimanis A.Y., Apsalon U.R., Vishnevskii Yansone I.V., Dishler A.V., Pudova N.V., Smorodintsev A.A., Iovlev V.I., Stepanov A.N., Feldmane G.Y., Meldrais Y.A., Lozha Kavsan V.M., Efimov V.A., Sverdlov E.D.;

"A new type of leukocytic interferon.";

Dokl. Biochem. 269:91-95(1983).

-I- SIMILARITY: BELONGS TO THE INTERFERON ALPHA, BETA AND DELTA
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                                                                                                                               Score 254.5; DB b;
Pred. No. 1.3e-14;
.....+ches 50;
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Catarrhini;
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HSSP; P01563; 2HIE.
InterPro; IPR000471; Interferon_abd.
Pfam; PF00143; interferon; 1.
PRINTS; PR00266; INTERFERONAB.
ProDom; PD000550; Interferon_abd; 1.
SMART; SM00076; IFabd; 1.
PROSITE; PS00252; INTERFERON_A_B_D; 1
Antiviral; Cytokine.
SEQUENCE 189 AA; 21810 MW; E6D8D9
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                                                         Interferon_abd;
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Mammalia; Eutheria; Primates;
NCBI_TaxID=9606;
[1]
                   InterPro; IPR000471; Interference Pfam; PF00143; interferon; 1. PRINTS; PR00266; INTERFERONAB Probom; PD000550; Interferon_
                                                                                                       22139 MW;
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AAG14170.1;
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(TrEMBLrel.
                                                                   SMART; SM00076; IFabd;
PROSITE; PS00252; INTE
Antlviral; Cytokine.
SEQUENCE 195 AA; 22
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AF238613; AA(P01563; 2HIE
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53; Conser
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Q14618;
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01-NOV-1996
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Best Local S
Matches 53
                                                        ProDom;
 EMBL;
HSSP;
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interferon
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Oryctolagus cuniculus (Rabbit).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostoml;
Mammalia; Eutheria; Lagomorpha; Leporidae; Oryctolagus.
AWDETLLDKFYIELFQQLNDLEACVTQEVGVEEIALMNEDSILAVRKYFQRITLYLMGKK
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"A defective retroviral vector encoding human interferon alpha transduce human leukemic cell lines.";
Cancer Gene Ther. 5:247-256(1998).
EMBL; Y11834; CAA72532.1; -.
SIGNAL 1 23 POTENTIAL.
SEQUENCE 188 AA; 21578 MW; 9BAA221D2BFB421D CRC64;
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Catarrhini; Hominidae; Homo
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encoding
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SEQUENCE FROM N.A.
TISSUE=PLACENTA;
MEDLINE=98357449; PubMed=9694076;
MEDLINE=98357449; PubMed=9694076;
MEDLINE=98357449; PubMed=9694076;
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(TrEMBLrel. 19, Last sequence update)
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r genes
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Mismatches
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Charlier M., L'Haridon R., Boisnard
"Cloning and structural analysis of
omega in rabbit.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRT;
                                       YSHCAWTIVRVEILRNFYFINRLTGYLR
                                                           Homo sapiens (Human).
Eukaryota; Metazoa; Chordata; Cr
Mammalia; Eutheria; Primates; Ca
NCBI_TaxID=9606;
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FAMILY
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Pfam; PFO(
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Best Local S
Matches 49
                                                                                                                                                                                                                                                                                                                    Signal.
SIGNAL
CHAIN
SEQUENCE
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for a primate
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Q95J78;
Q95J78;
Q1-DEC-2001 (TrEMBLrel. 19, Last sequence update)
Q1-DEC-2001 (TrEMBLrel. 19, Last annotation update)
Q1-DEC-2001 (TrEMBLrel. 19, Last annotation update)
Q1-DEC-2001 (TrEMBLrel. 19, Last annotation update)
INTERFERON-ALPHA PRECURSOR.
IFN-ALPHA.
Saguinus oedipus (Cotton-top tamarin).
Saguinus oedipus (Cotton-top tamarin).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Platyrrhini; Callitrichidae; Saguinus
                                                                                                                                                                                                                                                                    CLKDRMNFDIPEEIKQLQnFtKEDAALTIYEMLQNIFAIFRQDSSSTGWNETIVENLLAN
                                                                                                                                                                                                                                                                                       LLGFLQRSSNFQCQKLLWQLNGRLEYCLKDRMNFDIPEEIKQLQnFtKEDAALTIYEMLQ
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a new
                                                                                                                                                                                                                                  53;
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                                                                                                                                                                                               ; DB 6;
1.1e-13;
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POTENTIAL.
06A45DD2B631C85C
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Pred. No. 1.3e-13
29; Mismatches 6
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Submitted (OCT-1999) to the EMBL/GenBank/DDE EMBL; AJ250195; CAC44124.1; -.
                                                                                                                                                                                              Score 244; DB Pred. No. 1.1e-10; Mismatches
HSSP; P01563; 2HIE.
InterPro; IPR000471; Interferon_abd.
Pfam; PF00143; interferon; 1.
PRINTS; PR00266; INTERFERONAB.
ProDom; PD0000550; Interferon_abd; 1.
SMART; SM00076; IFabd; 1.
PROSITE; PS00252; INTERFERON_A_B_D; 1
Antiviral; Cytokine.
SEQUENCE 195 AA; 21981 MW; D4D2E31
                                                                                                                                                                                                                              20;
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189 P
21937 MW;
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1999) to the |
CAC44124.1;
                                                                                                                                                                                             27.98;
41.18;
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33.3%;
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51; Conserv
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189
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Best Local S
Matches 51
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Best Local S
Matches 54
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Signal.
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of human
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a primate
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                   01-DEC-2001 (TrEMBLrel. 19, Created)
01-DEC-2001 (TrEMBLrel. 19, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
INTERFERON-ALPHA PRECURSOR.
IFN-ALPHA.
Saguinus oedipus (Cotton-top tamarin).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Platyrrhini; Callitrichidae; Saguinus
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lymphoblastoid ce
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                                                                                                                                                                                              F.,
tool
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                                                                                                                                                                                              Palombo
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on update
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60;
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                                                                                                                                                                                                                                                                                                  INTERFERON-ALPHA.
9E4389CFEC329DBA
                                                                                                                                                                                                                                                                                                                                                               ore 241; DB 6;
ed. No. 1.9e-13
Mismatches 6
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                                                                                                                                                                                          Ceccacci A., Aurisicchio L., Ciliberto G., F
"Recombinant cotton-top tamarin interferon:
hepatitis model.";
Submitted (OCT-1999) to the EMBL/GenBank/DDE
EMBL; AJ250196; CAC44125.1; -.
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01-NOV-1996 (TrEMBLrel. 01, Last sequence up
01-JUN-2001 (TrEMBLrel. 17, Last annotation
INTERFERON-ALPHA-J1 (IFN-ALPHA-J1).
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Catarrhini;
189
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRINTS; PR00266; INTERFERONAB.
PRODOM; PR000550; Interferon_abd; 1.
SMART; SM00076; IFabd; 1.
PROSITE; PS00252; INTERFERON_A_B_D;
Antiviral; Cytokine.
SEQUENCE 189 AA; 22048 MW; 2AF61
                                                                                                                                                                                                                                                                                                                                                                Score
Pred.
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SEQUENCE FROM N.A.
MEDLINE=86005847; PubMed=2995168;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens (Human).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
                                                                                                                                                                                                                                                                                                                   MW;
                                                                                                                                                                                                                                                                                                                                                               th 27.5%;
Similarity 36.0%;
49; Conservative
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189
22052
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HSSP; P01563; 2HIE.
InterPro; IPR000471; Inte
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PRELIMINARY
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189
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              95J77;
1-DEC-2001
1-DEC-2001
1-DEC-2001
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                                            LLWQLNGRLE--YCLKDRMNFDIPEEIKQLQnFtKEDAALTIYEMLQNIFAIFRQDSSST
                                                                                       -VLEEKLEKEDFTRGKLMSSLHLKRYYGRIL
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                                                                                                                                                                                                                                                                                        Bos taurus (Bovine).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea
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                                                                 40 LLAQM-GRISPFSCLKDRHEFRFPEEFFDGHQFQKTQAISVLHEMIQQTFNLFSTEDSSA
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                     17;
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  189
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                                                                                                                                                                                                                                                                                                                                                                 Chung Y.G., Seidel G.E. Jr.; "Cloning bovine interferon-tau genes and characterizing the transcriptional expression during early pregnancy."; Submitted (FEB-2000) to the EMBL/GenBank/DDBJ databases. -! SIMILARITY: BELONGS TO THE INTERFERON ALPHA, BETA AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length
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                       Indels
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                                                                                                                                                                                                                                  Created)
Last sequence update)
Last annotation update)
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Pred. No. 3.2e-13;
           3;
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ore 240.5; DB ed. No. 2.1e-13 Mismatches 5
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                                                                                                                                  HYLKAKEYSHCAWTIVRVEILRNFYFINRLTGYLR
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LYLTEKKYSPCAWEVVRAEIMRSFSFSTNLKKGLR
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 Score
Pred.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ProDom; PD000550; Interferon_abd; SMART; SM00076; IFabd; 1. Antiviral; Cytokine. SEQUENCE 195 AA; 22160 MW; 6D
                   22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  29;
                                                                                       GWNETIVENLLANVYHQINHLKT--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 INTERFERONAB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           27.3%;
illarity 37.5%;
Conservative 2
27.5%;
37.4%;
                                                                                                                                                                                                                                                                                                                                                                                                      EMBL; AF238611; AACLESESP; P01563; 2HIE.
TO; IPR000471; Interferon;
                                                                                                                                                                                                                                    16,
16,
19,
                                                                                                                                                                                                                                                                                                                                                                                                                                    AAG14168.1;
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        Local Similarity 37.
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EYSDCAWEIIRVEMMR
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                                                                                                                                                                                                                                                                                                                       Bovidae; Bovinae;
NCBI_TaxID=9913;
                                                                                                                                                                                                                                                                                                                                                          FROM N.A
                                                                                                                                                                                                                                                                  INTERFERON TAU.
IFN-TAU-C3.
                                                                                                                                                                                                                                  01-MAR-2001
01-MAR-2001
01-DEC-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                51;
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Best Local S
Matches 51
                                                                                                                                                                                                                                                                                                                                                          SEQUENCE
 Match
                                                                                                                                                                                                            Q9GLL6
Q9GLL6;
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Q13168;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VYHQINHLKTVLEEKLEKEDFTRGKLMSSLHLKRYYGRILHYLKAKEYSHCAWTIVRVEI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Euteleostomi;
                                                                                                                                                                                                                     expression
                                                                                                                                                                                                                                                                                                                              litted (APR-1995) to the EMBL/GenBank/DDBJ databases. SIMILARITY: BELONGS TO THE INTERFERON ALPHA, BETA AND DELTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BETA AND DELTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 174;
                                                                                                                     Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
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encoding
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le; Oryctolagus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CRC64;
                                                                                                                                                                                                                 and
                                                                                              Vertebrata; |
.; Hominidae;
(TrEMBLrel. 01, Created)
(TrEMBLrel. 01, Last sequence update)
(TrEMBLrel. 19, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  annotation update)
                                                                                                                                                                                                                  structure
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            omega in rabbit.";
J. Interferon Res. 13:313-322(1993).
-!- SIMILARITY: BELONGS TO THE INTERFERON ALPHA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ,
3,
58;
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c genes
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 236; DB
Pred. No. 4.6e
2; Mismatches
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                                                                                              Craniata; Vo
Catarrhini;
                                                                                                                                                                                   of the primary s
1 gene.".
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MEDLINE=94132653; PubMed=8301151;
Charlier M., L'Haridon R., Boisnard
"Cloning and structural analysis of
omega in rabbit.";
                                                                                                                                                                                                                                                                                                                                                                               EMBL; U25670; AAA70091.1; -.
HSSP; P01563; 2HIE.
InterPro; IPR000471; Interferon_abd
Pfam; PF00143; interferon; 1.
PRINTS; PR00266; INTERFERONAB.
ProDom; PD000550; Interferon_abd; 1
SMART; SM00076; IFabd; 1.
PROSITE; PS00252; INTERFERON_A_B_D;
Antiviral; Cytokine.
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INTERFERON_A_B_D;
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Q28845;
Q28845;
Q1-845;
Q1-NOV-1996 (TrEMBLrel. 01, Create 01-NOV-1996 (TrEMBLrel. 10, Last soll-DEC-2001 (TrEMBLrel. 19, Last soll-DEC-2001 (TremBlant soll-DEC-2001 (TremBla
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                                                                                            Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MW;
                                                       INTERFERON OMEGA-1 (FRAGMENT)
Homo sapiens (Human).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    27.0%;
ilarity 33.8%;
Conservative
                                                                                                                                                                      SEQUENCE FROM N.A.
Zeng Q., Li M., Zhou Y., Gu
"The cloning, sequencing of
coli Chinese human IFN-W1 g
Sci. China B. 0:0-0(0).
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20249
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2HIE.
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                                                                           (Human)
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46; Conserv
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                                                                                                                                    NCBI_TaxID=9606;
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L; S69000;
P; P01563;
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|-NOV-1996
|-NOV-1996
|-DEC-2001
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NON_TER
SEQUENCE
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Submitted
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Best Local S
Matches 46
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Q28845
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Best Local S
Matches 49
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SEQUENCE
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Q28545
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                                                                                                                                             Gaps
                                                                                                                                                                    90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.

TISSUE-LIVER;

MEDLINE-92039090; PubMed-1937057;

Whaley A.E., Carroll R.S., Imakawa K.;

"Cloning and analysis of a gene encoding ovine interferon alpha-II."

Gene 106:281-282(1991).

-I - SIMILARITY: BELONGS TO THE INTERFERON ALPHA, BETA AND DELTA
                                                                                                                                                                                AMY 49.
Ovis aries (Sheep).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea,
Bovidae; Caprinae; Ovis.
NCBI_TaxID=9940;
                                                                                                                                                                    CLKDRMNFDIPEEIKQLQnFtKEDAALTIYEMLQNIFAIFRQDSSSTGWNETIVENLLAN
                                                                                                                                                                                                                 VYHQINHLKTVLEEKLEKEDFTRGKLMSSLHLKRYYGRILHYLKAKEYSHCAWTIVRVEI
                                                                                                                                                                                                                               CLKDRRDFQFPREVVNGSQFQKNQTVSVLHEMLQQTFNLLHTARSSAAWNNTLLEELHTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CLKDRMNFDIPEEIKQLQnFtKEDAALTIYEMLQNIFAIFRQDSSSTGWNETIVENLLAN
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0
                                                                                                                     Length 195;
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                                                                                                                                             Indels
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OVINE INTERFERON ALPHA.
3B8EE700C586A928 CRC64
                                                                                    CRC64
                                                                                                                                                                                                                                                                                                                                                                                   Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ore 236; DB 6; Led. No. 5.3e-13; Mismatches 55;
                                                                                                                  27.0%; Score 236; DB 6;
larity 39.5%; Pred. No. 5.3e-13;
Conservative 20; Mismatches 55;
                                                                                   395EE700C586A928
                                                                                                                                                                                                                                                                                                                                                195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL; X59068; CAA41791.1; -.
HSSP; P01563; 2HIE.
InterPro; IPR000471; Interferon_abd.
Pfam; PF00143; Interferon; 1.
PRINTS; PR00266; INTERFERONAB.
ProDom; PD000550; Interferon_abd; 1.
SMART; SM00076; IFabd; 1.
PROSITE; PS00252; INTERFERON_A_B_D; 1.
Antiviral; Cytokine; Signal.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            INTERFERON_A_B_D;
ne; Signal.
23
                                                                                                                                                                                                                                                                                                                                                                       Created)
                                                            B_D;
InterPro; IPR000471; Interferon_abd
Pfam; PF00143; interferon; 1.
PRINTS; PR00266; INTERFERONAB.
ProDom; PD000550; Interferon_abd; 1
SMART; SM00076; IFabd; 1.
PROSITE; PS00252; INTERFERON_A_B_D;
Antiviral; Cytokine.
SEQUENCE 195 AA; 21996 MW; 395E
    Interferon_abd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   core
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Pred.
                                                                                                                                                                                                                                                                                                                                                                                                        INTERFERON ALPHA PRECURSOR
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01,
19,
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39.5%;
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                                                                                                                                                                                                                                                                                                                                                PRELIMINARY;
                                                                                                                               l Similarity
49; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             195
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|-NOV-1996
|-DEC-2001
                                                                                                                                                                                                                                                                                       RRAF
                                                                                                                     Query Match
Best Local S
Matches 49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE
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                                                                                                                                                                                                                                                                                                                                               Q28562
Q28562;
01-NOV-
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Best Loc
Matches
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Ovis aries (Sheep).

Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
Bovidae; Caprinae; Ovis.

NCBI_TaxID=9940;
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TO THE INTERFERON ALPHA, BETA AND DELTA
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                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
MEDLINE=96219886; PubMed=8639714;
Liu L., Leaman D.W., Bixby J.A., Roberts R.M.;
"A type I ovine interferon with limited similarity to IFN-algomega and IFN-tau: gene structure, biological properties and species specificity.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 195;
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INTERFERON TYPE I.
15C4CD45D582F86E CRC64;
                                                                                                                                                                                               Created)
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Pred. No. 5.3e-13;
); Mismatches 55;
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HSSP; P01563; 2HIE.
InterPro; IPR000471; Interferon_abd.
Pfam; PF00143; interferon; 1.
PRINTS; PR00266; INTERFERONAB.
ProDom; PD000550; Interferon_abd; 1.
SMART; SM00076; IFabd; 1.
PROSITE; PS00252; INTERFERON_A_B_D; 1.
Antiviral; Cytokine; Signal.
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22010 MW;
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Similarity 39.5%;
49; Conservative
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Copyright (c) 1993 - 2000 Compugen Ltd
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OM protein - protein search, using sw model

29, 2002, 15:42:04; Search time 15.89 Seconds (without alignments) 404.496 Million cell updates July Run on:

....RVEILRNFYFINRLTGYLRN 166 SEQ2-49N-51S 874 1 MSYNLLGFLQRSSNFQCQKL.... Title: Perfect score: Sequence:

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

105224 seqs, 38719550 residues Searched:

105224 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

SwissProt_40:* Database

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed and is derived by analysis of the total score distribution.

SUMMARIES

	P01574 homo sapien	n2j0 felis sil	1576	P05012 equus cabal	P01577 bos taurus	P01578 bos taurus	57	P70499 rattus norv	00	001	003	5005	06 equus ca	633	05004 equus cab	5015	7352 bos ta		2942	0156	0200	0501	56828 ov	682	015	1567 homo sa	5 ovis ar	8	P15696 bos taurus	Q08071 ovis aries	281	1 ho	Q28594 ovis aries
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ALIGNMENTS

RESULT INB_HUMAN AC 21-JUL-1986 (Rel. 0) DT 21-JUL-1986 (Rel. 0) DT 21-JUL-1986 (Rel. 0) DT 21-JUL-1986 (Rel. 0) DT 16-OCT-2001 (Rel. 4) DE INTERIOR IFNB OR IF OS HOMO SADIENS (Human OC BUKARYOTA) MEDLINE-81198952; PRA LAWN R.M., Adelman RA Majarian R.M., Adelman RA MEDLINE-8105095; PRA MEDLINE-8105095; PRA MEDLINE-80254542; PRA MEDLINE-80254542; PRA MEDLINE-80254542; PRA MEDLINE-80254542; PRA MEDLINE-80254542; PRA MEDLINE-80254542; PRA MEDLINE-81053750; PRA Cartlin G.H., Lewis RA MEDLINE-81053752; PRA GOEGGEL D.V., Shepa RA MEDLINE-81053752; PRA SCOUENCE FROM N.A. MEDLINE-81053752; PRA SCOUENCE FROM N.A. MEDLINE-81053752; PRA POSTER S., NAMELINE-81053752; PRA POSTER S., NAMELINE	ALIGNMENTS NA STANDARD: PRT; 187 AA. 1986 (Rel. Ol. Created) 2001 (Rel. 40, Last sequence update) 2011 (Rel. 40, Last sequence update) 2012 (Rel. 40, Last sequence update) 2013 Marked States A.E., Houck C.M., Gross M., 2014 Marked States A.E., Houck C.M., Gross M., 2015 Marked States A.E., Houck C.M., Gross M., 2016 Marked States A.E., 2016 Marked States A.E., 2017 Marked States A.E., 2018 Marked
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            X-RAY CRYSTALLOGRAPHY (2.2 ANGSTROMS).
MEDLINE-98004481; PubMed-9342320;
Karpusas M., Nolte M., Benton C.B., Meler W., Lipscomb W.N., Goelz S.
Rarpusas M., Nolte M., Benton C.B., Meler W., Lipscomb W.N., Goelz S.
"The crystal structure of human interferon beta at 2.2-A resolution."
Proc. Natl. Acad. Sci. U.S.A. 94:11813-11818(1997).
-1- FUNCTION: HAS ANTIVIRAL, ANTIBACTERIAL AND ANTICANCER ACTIVITIES.
-1- FUNCTION: HAS ANTIVIRAL, ANTIBACTERIAL AND ANTICANCER ACTIVITIES.
-1- PHARMACEUTICAL: Available under the names Avonex (Biogen),
Betaseron (Berlex) and Rebif (Serono). Used in the treatment of
multiple sclerosis (MS). Betaseron is a slightly modified form
of IFNB1 with two residue substitutions.
-1- SIMILARITY: BELONGS TO THE INTERFERON ALPHA, BETA AND DELTA
                                                                                         Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE OF 71-187 FROM N.A. (VARIANT CLONE PF526).
MEDLINE-82080683; PubMed-6171735;
Shepard H.M., Leung D., Stebbing N., Goeddel D.V.;
"A single amino acid change in IFN-betal abolishes its antiviral activity.";
Nature 294:563-565(1981).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  of leukocyte interferon."
                                                                                                                                                                                                  SEQUENCE OF 1-68 FROM N.A.
MEDLINE-81053854; PubMed-6159597;
Houghton M., Stewart A.G., Doel S.M., Emtage J.S., Eaton M.A.
Smith J.C., Patel T.P., Lewis H.M., Porter A.G., Birch J.R.,
Cartwright T., Carey N.H.;
"The amino-terminal sequence of human fibroblast interferon
deduced from reverse transcripts obtained using synthetic
oligonucleotide primers.";
Nucleic Acids Res. 8:1913-1931(1980).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DATABASE: NAME-Avonex; NOTE-Clinical information on WWW-"http://www.avonex.com/".
DATABASE: NAME-Betaseron; NOTE-Clinical information WWW-"http://www.betaseron.com/PI.html".
                                                                                         ⊣
                                                                                         alpha
SEQUENCE FROM N.A.
MEDLINE-86035565; PubMed-2414376;
May L.T., Sehgal P.B.;
"On the relationship between human interferon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "Assignment of the disulphide bonds Nature 289:606-607(1981).
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Pfam; PF00143; interferon; 1.
PRINTS; PR00266; INTERFERONAB.
ProDom; PD000550; Interferon_abd; 1
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5; PS00252; INTERFERON_A_B_D;
1e; Glycoprotein; Antiviral;
                                                                                                                                                5:521-526(1985)
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MEDLINE-81123083; Pubmed-6162107
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V00546;
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3D-structure.
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PIR; A01838;
PDB; 1AU1; 17
MIM; 147640;
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TO THE INTERFERON ALPHA, BETA
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a; Felidae;
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                                                                                                                                                                                                                                                                                                                                                                                          Kishi M.;
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line interferon beta.";
the EMBL/GenBank/DDBJ d
RAL, ANTIBACTERIAL AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                              This SWISS-PROT entry is copyright. It is produbetween the Swiss Institute of Bioinformatics the European Bioinformatics Institute. There at the European Bioinformatics Institutions as long as institutions as long as institutions.
                                                                                        Score 864; DB 1;
Pred. No. 6.8e-65
; Mismatches
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BY SIMILARITY.
N-LINKED (GLCNAC.
N-LINKED (GLCNAC.
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sor (IFN-beta).
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; Fissipedia;
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INTERFERON N-LINKED (
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InterPro; IPR000471; Interferon_abd
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INTERFERON_A_B_D;
1; Glycoprotein;
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Eukaryota; Metazoa; Chordata; (
Mammalia; Eutheria; Carnivora;
                                                                                                           ö
                                                                                                                                                                                                                                                                                        Created)
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"Gentic structure of feline in
Submitted (DEC-1998) to the EM
-!- FUNCTION: HAS ANTIVIRAL, A
(BY SIMILARITY).
-!- SUBUNIT: MONOMER (BY SIMIL
-!- SIMILARITY: BELONGS TO THE
FAMILY.
                                                               MM;
                                                                                        98.9%;
ilarity 98.8%;
Conservative
                                                               2294
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5-OCT-2001
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Q9N2JO;
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CHAIN
CARBOHYD
DISULFID
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
Bovidae; Bovinae; Bos.
                                                                                                                                                                                                    MSYNLLGFLQRSSNFQCQKLLWQLNGRLEYCLKDRMNFDIPEEIKQLQnFsKEDAALTIY
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Leung D.W., Capon D.J., Goeddel D.V.;
"The structure and bacterial expression of three distinct boving interferon-beta genes.";
Biotechnology 2:458-464(1984).
-! FUNCTION: HAS ANTIVIRAL, ANTIBACTERIAL AND ANTICANCER ACTIVITIES SUBUNIT: MONOMER.
-! SUBUNIT: MONOMER.
-! SUBUNIT: MONOMER.
-! SUBUNIT: MONOMER.
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PROBABLE.
N-LINKED (GLCNAC. . .) (POTENTIAL)
N-LINKED (GLCNAC. . .) (POTENTIAL)
D9F257C6E3250480 CRC64;
 N-LINKED (GLCNAC. . .) (POTENTIAL)
25C359B1808AC862 CRC64;
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PIR; A01840; IVBOB2.
HSSP; P01574; 1AU1.
InterPro; IPR000471; Interferon_abd.
Pfam; PF00143; interferon; 1.
PRINTS; PR00266; INTERFERONAB.
ProDom; PD000550; Interferon_abd; 1.
SMART; SM00076; IFabd; 1.
PROSITE; PS00252; INTERFERON_A_B_D; 1.
Cytokine; Glycoprotein; Antiviral; Multigene family; Signal 12 1 21 INTERFERON BETA-2.
DISULFID 52 186 INTERFERON GLCNAC. ..) (POCCARBOHYD 131 131 N-LINKED (GLCNAC. ..) (POCCARBOHYD 173 173 N-LINKED (GLCNAC. ..) (POCCARBOHYD 1
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NLKKYYLRIVRYLKAKEYSVCAWTVVHAEILRNFFFLERLTDYLQN 186
                                                                                               Score 516.5; DB 1;
Pred. No. 3.8e-36;
5; Mismatches 38;
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21-JUL-1986 (Rel. 01, Last sequence update)
01-NOV-1997 (Rel. 35, Last annotation update
Interferon beta-2 precursor.
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22187 MW;
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21-JUL-1986
01-NOV-1997
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P01576;
 CARBOHYD
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                                                  MSYNLLGFLQRSSNFQCQKLLWQLNGRLEYCLKDRMNFDIPEEIKQLQnFSKEDAALTIY
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..) (POTENTIAL).
CRC64;
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Mammalia; Eutheria; Perissodactyla; Equidae; Equus.
NCBI_TaxID=9796;
                                                                                                                              LKRYYGRILHYLKAKEYSHCAWTIVRVEILRNFYFINRLTGYLR
|::|| :: |||:|||: ||||:||||||
|LRKYYFNLVQYLKSKEYNRCAWTVVRVQILRNFSFLTRLTGYLR
2.4e-33;
Thes 40;
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                                                                                                                                                                                                                                                                                                                                                                                                                                        SIMILARITY: BELONGS TO THE INTERFERON ALPHA, FAMILY.
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Pred. No. 6.3e-33;
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Last annotation update)
rsor (IFN-beta).
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         d. NO. 2.4
Mismatches
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SEQUENCE FROM N.A.
MEDLINE=87053170; PubMed=3022999;
MEDLINE=87053170; PubMed=3022999;
MEDLINE=87053170; PubMed=3022999;
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IPPO0143; interferon, 1.

TS; PR00266; INTERFERONAB.

Om; PD000550; Interferon_abd; 1.

TT; SM00076; IFabd; 1.

ITE; PS00252; INTERFERON_A_B_D; INTERFERON_A_B_D;
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      Pred
              30;
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57.88;
    56.7%;
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P05012;
13-AUG-1987 (Rel. 05, Creat
13-AUG-1987 (Rel. 05, Last
01-NOV-1997 (Rel. 35, Last
Interferon beta precursor (
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               Conservative
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; P01574; IAU1.
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Pfam; PFOC
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CARBOHYD
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INB_HORSE
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Bovoidea;
                      EMLONIFATFRODSSSTGWNETIVENLLANVYHOINHLKTVLEEKLEKEDFTRGKLMSSL
                                 VNYDLLRSQLRSSNSACLMLLRQLNGAPQRCPEDTMNFQVPEE1EQAQQFQKEDAALVIY
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                                                                                                                                                                                                                                Vertebrata; Eute.
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                                                                                                                                                                                                                                                                                                                   three
                                                                                                                                                                                                                                                                                                                                                                       THE INTERFERON ALPHA,
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Eukaryota; Metazoa; Chordata; Craniata; Vertebra
Mammalia; Eutheria; Cetartiodactyla; Ruminantia;
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LINKED (GLCNAC.
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                                                                                                                                                                               Last sequence update)
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Mismatches
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N-LINKED
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HSSP; P01574; 1AU1.
InterPro; IPR000471; Interferon_abd.
Pfam; PF00143; interferon; 1.
PRINTS; PR00266; INTERFERONAB.
ProDom; PD0000550; Interferon_abd; 1.
SMART; SM00076; IFabd; 1.
PROSITE; PS00252; INTERFERON_A_B_D; 1
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"The structure and bacterial ex
interferon-beta genes.";
Biotechnology 2:458-464(1984).
-!- FUNCTION: HAS ANTIVIRAL, AN
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PIR; A01841; IVBOB3.
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                                                                                                                                             STANDARD;
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87; Conser
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                                                                                                                                                                    (Rel.
                                                                                                                                                                                                                                                            Bovinae;
                                                                                                                                                                                                                                                                     NCBI_TaxID-9913
                                                                                                                                            INB3_BOVIN
P01577;
21-JUL-1986
21-JUL-1986
01-NOV-1997
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SIGNAL
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CARBOHYD
CARBOHYD
SEQUENCE
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Best Local
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22
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Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoldea
Bovidae; Bovinae; Bos.
NCBI_TaxID=9913;
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No. 4.9e-29;
smatches 45;
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N-LINKED (GLCNAC...); F9060C07EA415B9C C
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expression
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Leung D.W., Capon D.J., Goeddel D.V "The structure and bacterial expressinterferon-beta genes.";
Biotechnology 2:458-464(1984).
-! FUNCTION: HAS ANTIVIRAL, ANTIBAC-!- SUBUNIT: MONOMER.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           InterPro; IPR000471; Interferon_abd
Pfam; PF00143; interferon; 1.
PRINTS; PR00266; INTERFERONAB.
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Pred.
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ProDom; PD000550; Interferon_abd;
SMART; SM00076; IFabd; 1.
PROSITE; PS00252; INTERFERON_A_B_I
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                                                                                                                                                 Created)
                                                                                                                          21-JUL-1986 (Rel. 01, Created 21-JUL-1986 (Rel. 01, Last se 01-NOV-1997 (Rel. 35, Last an Interferon beta-1 precursor. IFNB1.
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50.3%;
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PIR; A01842; IVBOB1.
HSSP; P01574; 1AU1.
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                                                                                                                 STANDARD;
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SIMILARITY: BELONGS
FAMILY.
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                                                                                                                                                                                                                                                                                                                               FROM
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P01578;
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SIGNAL
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CARBOHYD
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Sciurognathi; Muridae; Murinae; Mus
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                                                                                                                                                                                                                                                                                                                                                                                                                  "Structure and expression of a cloned cDNA for mouse interferon
                                                                                                                                                                                                                                                                                                                                                                                S., Takaoka
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TO THE INTERFERON ALPHA, BETA AND DELTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STRUCTURE OF CARBOHYDRATES.
MEDLINE-88196115; PubMed-3360010;
Civas A., Fournet B., Coulombel C., le Roscouet D., Honvault Petek F., Montreuil J., Doly J.;
"Purification and carbohydrate structure of natural murine interferon-beta.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BOND
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MEDLINE-92371425; PubMed-1505514;
Senda T., Shimazu T., Matsuda S., Kawano G., Shimizu H
Nakamura K.T., Mitsui Y.;
"Three-dimensional crystal structure of recombinant mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           recombinant murine i . Sci. 66:77-80(1990)
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Senda T., Matsuda S., Kurihara H., Nakamura
Shimizu H., Mizuno H., Mitsui Y.;
"Three-dimensional structure of recombinant
Proc. Jpn. Acad., B, Phys. Biol. Sci. 66:77-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NOT HAVE
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rsor (IFN-beta).
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J. Mol. Biol. 253:187-207(1995).
-!- FUNCTION: HAS ANTIVIRAL, ANTIBACTERIAL
                                                                                                                                                                                                                                                                                                                                                                                ., Kawade
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          recombinant
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MEDLINE-89125582; PubMed-3221389;
Vodjdani G., Coulombel C., Doly J.;
"Structure and characterization of a micontaining the interferon beta gene.";
J. Mol. Biol. 204:221-231(1988).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 X-RAY CRYSTALLOGRAPHY (2.15 ANGSTROMS) MEDLINE=96028219; PubMed=7473712; Senda T., Saltoh S.-I., Mitsul Y.; "Refined crystal structure of recombin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                17:3291-3291(1989)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
MEDLINE-89263735; PubMed-2726460;
Kuga T., Fujita T., Taniguchi T.;
"Nucleotide sequence of the mouse
                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
MEDLINE-83265757; Pubmed-6688252;
Higashi Y., Sokawa Y., Watanabe Y
                                                                                                Created)
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Shimizu H., Mizuno H., Mitsui
"Three-dimensional structure of Proc. Jpn. Acad., B, Phys. Bic
                                                                                                                                                                                                                                    Metazoa; Chordata;
Eutheria; Rodentia;
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                                                                                                                                                                 Interferon beta precursor
                                                STANDARD;
                                                                                          (Rel. 01, (Rel. 01, (Rel. 37,
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Mammalia; Eutheria
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Eur. J. Blochem.
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                                         INB_MOUSE
P01575;
21-JUL-1986
21-JUL-1986
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Taniguchi
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MEDLINE=97271387; PubMed=9126338;
Yokoyama S., Ohishi N., Shamoto M., Watanabe Y., Yagi K.;
"Isolation and expression of rat interferon beta gene and inhibitory effect of its expression on rat glioma cells.";
Biochem. Biophys. Res. Commun. 232:698-701(1997).
-!- FUNCTION: HAS ANTIVIRAL, ANTIBACTERIAL AND ANTICANCER in SUBUNIT: MONOMER (BY SIMILARITY).
-!- PTM: THIS BETA INTERFERON DOES NOT HAVE A DISULFIDE BOIL SIMILARITY: BELONGS TO THE INTERFERON ALPHA, BETA AND In STATE AND INTERFERON ALPHA, BETA 
                 content
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Sciurognathi; Murida
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SC4C32947FD1B917 (
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ed. No. 2.9e-21;
Mismatches 59;
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(Rel. 36, Last annotation update)
eta precursor (IFN-beta).
                as long ē
removed.
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and this statement is not remor
requires a license agreement (
In email to license@isb-sib.ch)
                                                                                                  EMBL; K00020; AAA37891.1; -.
EMBL; X14455; CAA32625.1; -.
EMBL; X14029; CAA32190.1; -.
PIR; X01839; IVMSB.
PIR; S02020; S02020.
PDB; 11FA; 31_JAN-94.
PDB; 1RMI; 14-FEB-95.
MGD; MGI:107657; Ifnb.
InterPro; IPR000471; Interferon_abd.
Pfam; PF00143; interferon; 1.
PRINTS; PR00266; INTERFERONAB.
ProDom; PD000550; Interferon_abd; 1.
SMART; SM00076; IFabd; 1.
PROSITE; PS00252; INTERFERON_A_B_D; 1.
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Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata; C
Mammalla; Eutheria; Rodentia; S
NCBI_TaxID=10116;
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This SWISS-PROT entry is copyright. It is produced through a collabora between the Swiss Institute of Bioinformatics and the EMBL outstatithe European Bioinformatics Institute. There are no restrictions on use by non-profit institutions as long as its content is in no modified and this statement is not removed. Usage by and for commer entities requires a license agreement (See http://www.isb-sib.ch/annou or send an email to license@isb-sib.ch).
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13-AUG-1988 (Rel. 05, Last sequence update)
01-APR-1988 (Rel. 07, Last annotation update)
Interferon omega-2 precursor (Interferon alpha-II-2).
Equus caballus (Horse).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Perissodactyla; Equidae; Equus.
NCBI_TaxID-9796;
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MEDLINE-87053170; PubMed-3022999;
Himmler A., Hauptmann R., Adolf G.R., Swetly P.;
"Molecular cloning and expression in Escherichia I interferons.";
DNA 5:345-356(1986).
-1- SIMILARITY: BELONGS TO THE INTERFERON ALPHA,
                                                                                                                                                                                                                                                                                                                                                                              Score 328.5; DB 1;
Pred. No. 1.3e-20;
; Mismatches 65;
                                                                                                      EMBL; D87919; BAA13502.1;
HSSP; P01575; 2HIF.
InterPro; IPR000471; Interferon_abd.
Pfam; PF00143; Interferon; 1.
PRINTS; PR00266; INTERFERONAB.
ProDom; PD000550; Interferon_abd; 1.
SMART; SM00076; IFabd; 1.
SMART; SM00076; IFabd; 1.
Cvtokine; Antiviral; Glycoprotein; Signal.
Cvtokine; Antiviral; Glycoprotein; Signal.
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dae; Equus.
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13-AUG-1987 (Rel. 05, Last sequence update)
01-APR-1988 (Rel. 07, Last annotation update)
Interferon omega-1 precursor (Interferon alpha-II-1).
Equus caballus (Horse).
Eukaryota, Metazoa; Chordata; Craniata; Vertebrata; Eutemmalia; Eutheria; Perissodactyla; Equidae; Equis
                                                                                                                                                                                                 INTERFERON OMEGA-2.
BY SIMILARITY.
BY SIMILARITY.
N-LINKED (GLCNAC. . .) (PC); 949DA221AB3C17DF CRC64;
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57;
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in Escherichia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         THE INTERFERON ALPHA,
                                                                                                                                                                                                                                                                                         Score 284; DB 1;
Pred. No. 6.8e-17;
Mismatches 5
                                                                                                                                                                  1.
Multigene
EMBL; M14545; A.

EMBL; A16557; CAAOL.

PIR; F24912; IVHO22.
HSSP; P01563; 24HE.

A InterPro; IPR000471; Interfer.

PRINTS; PR00266; INTERFERONAB.

DR ProDom; PD000550; Interferon_abd; 1.

DR SMART; SM00076; IFabd; 1.

Cytokine; Glycoprotein; Antiviral; Mulanal.

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EMBL; A15991; CAA01259.1; -.
PIR; E24912; IVHO21.
HSSP; P01563; 2HIE.
InterPro; IPR000471; Interferon_abd.
Pfam; PF00143; interferon; 1.
PRINTS; PR00266; INTERFERONAB.
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MEDLINE-87053170; PubMed-3022999;
Himmler A., Hauptmann R., Adolf G.R
"Molecular cloning and expression in
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ilarity 36.6%;
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DNA 5:345-356(1986).
-1- SIMILARITY: BELONGS
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                                                                                                                                                                                                                                                                                                                                                                                                                                          111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    150
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                                                                                                                                                                                                                                                                                                                                                                                             90
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DNA 5:345-356(1986).
-!- FUNCTION: PRODUCED BY MACROPHAGES, IFN-ALPHA HAVE ANTIVIRAL
ACTIVITIES. INTERFERON STIMULATES THE PRODUCTION OF TWO ENZYMES
A PROTEIN KINASE AND AN OLIGOADENYLATE SYNTHETASE.
-!- SIMILARITY: BELONGS TO THE INTERFERON ALPHA, BETA AND DELTA
                                                                                                                                                                                                                                                                                                                                                                                             CLKDRMNFDIPEEIKQLQnFsKEDAALTIYEMLQNIFAIFRQDSSSTGWNETIVENLLAN
                                                                                                                                                                                                                                                                                                                                                                                                                   VYHQINHLKTVLEEKLEKEDFTRGKLMSSLHLKRYYGRILHYLKAKEYSHCAWTIVRVEI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Euteleostomi;
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                                                                                            Signal
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                                                                                        family;
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.dae; Equus.
                                                                                                                                                        BY SIMILARITY.

BY SIMILARITY.

N-LINKED (GLCNAC...)

A81C3CF0A7CA9B6E (
                                                                                                                                                                                                                                                                                            Score 263; DB 1; I
Pred. No. 3.7e-15;
26; Mismatches 54;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
MEDLINE-87053170; PubMed-3022999;
Himmler A., Hauptmann R., Adolf G.R., Swetly P.;
"Molecular cloning and expression in Escherichia
                                                                                                                                        OMEGA-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Signal
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13-AUG-1987 (Rel. 05, Last sequence update)
01-MAR-1989 (Rel. 10, Last annotation update)
Interferon alpha-1 precursor.
Equus caballus (Horse).
Eukaryota; Metazoa; Chordata; Craniata; Verte Mammalia; Eutheria; Perissodactyla; Equidae;
                                                                               Aultigene
                                                                                                                                        INTERFERON
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family;
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PRINTS; PR00266; INTERFERONAB.
ProDom; PD000550; INTERFERONAB.
SMART; SM00076; IFabd; 1.
PROSITE; PS00252; INTERFERON_A_B_D;
Cytokine; Antiviral; Multigene famil
SIGNAL 1.
ProDom; PD000550; Interferon_abd; 1
SMART; SM00076; IFabd; 1.
PROSITE; PS00252; INTERFERON_A_B_D;
Cytokine; Glycoprotein; Antiviral; 1
SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Interferon_abd
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IVHOA1.
                                                                                    Glycoprotein; Ant
1 23
24 195
24 122
52 162
101 101
195 AA; 21882 N
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PIR; A24912; IV
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DISULFID
CARBOHYD
SEQUENCE
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Best Local S
Matches 54
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INA1_HORSE
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                                                                                                                                                                                                                                                                                                                    145
                                                                                                                                                               Gaps
                                                                                                                                                                                                   64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      I interferons.";

DNA 5:345-356(1986).

-!- FUNCTION: PRODUCED BY MACROPHAGES, IFN-ALPHA HAVE ANTIVIRAL

ACTIVITIES. INTERFERON STIMULATES THE PRODUCTION OF TWO ENZYMES

A PROTEIN KINASE AND AN OLIGOADENYLATE SYNTHETASE.

-!- SIMILARITY: BELONGS TO THE INTERFERON ALPHA, BETA AND DELTA

FAMILY.
                                                                                                                                                                                                                                                                          65 NIFAIFRQDSSSTGWNETIVENLLANVYHQINHLKTVLEEKLEKEDFTRGKLMSSLHLKR
                                                                                                                                                                                                                                                                                                   -- CLKDRNDFGFPQEVFDGNQFRKPQAISAVHETIQ
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                                                                                                                                                              14;
                                                                                                                     Length 184
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                                                                                                                                                             Indels
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MEDLINE-87053170; PubMed-3022999;
Himmler A., Hauptmann R., Adolf G.R., Swetly P.;
"Molecular cloning and expression in Escherichia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      INTERFERON ALPHA-3.
BY SIMILARITY.
BY SIMILARITY.
                                                                                                                                                             54;
INTERFERON ALPHA-1
BY SIMILARITY.
BY SIMILARITY.
                                                              9E860B8CD05C83E6
                                                                                                                      ; DB 1;
1.1e-14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-MAR-1989 (Rel. 10, Last sequence update)
Interferon alpha-3 precursor.
Equus caballus (Horse).
Eukaryota; Metazoa; Chordata; Craniata; Verte Mammalia; Eutheria; Perissodactyla; Equidae; (1)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            184 AA
                                                                                                                                                          Mismatches
                                                                                                                      Score 257;
Pred. No.
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                                                                                                                                         NO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; PD000550; Interferon_abd; 1.
SM00076; IFabd; 1.
E; PS00252; INTERFERON_A_B_D; 1.
ne; Antiviral; Multigene family;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             13-AUG-1987 (Rel. 05, Created)
13-AUG-1987 (Rel. 05, Last sequence up
01-MAR-1989 (Rel. 10, Last annotation
Interferon alpha-3 precursor.
Equus caballus (Horse).
                                                                                                                                                                                                                                                                                                                                                                          Interferon_abd
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EMBL; A16555; CAA01292.1; -.
PIR; C24912; IVHOA3.
HSSP; P01563; ZHIE.
InterPro; IPR000471; Interferon
Pfam; PF00143; interferon; 1.
PRINTS; PR00266; INTERFERONAB.
                                                               Ξ.
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36.0%;
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20782
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LLGQMRRISPFS-
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52
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P05005;
13-AUG-1987
13-AUG-1987
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PROSITE; F
Cytokine;
SIGNAL
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Mon

rsp.

seq2-49n-51s

145

QIFHLESTDGSSAAWDESLLDKLYTGLYQQLTELEACLSQEVGVEETPLMNEDSLLAVRR

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NIFAIFRODSSSTGWNETIVENLLANVYHOINHLKTVLEEKLEKEDFTRGKLMSSLHLKR

||| ::| | | LLGQMRRISPFS

40

st protein-1) (TP-1)
antiluteolytic protein)

(Rel. 39, Created) (Rel. 39, Last sequence update) (Rel. 39, Last annotation update) au precursor (IFN-tau) (Trophoblast in) (Antiluteolysin) (Trophoblast an

Interferon tau precursor (Trophoblastin) (Antilute

(Red

elaphus

IFNT

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STANDARD;

CEREL

ΠD

INT_CEREL

RESULT

046633

30-MAY-2000

30-MAY-2000 30-MAY-2000

deer). Chordata; Craniata; Vertebrata; Euteleostomi; Cetartiodactyla; Ruminantia; Pecora; Cervoidea; Cervus.

Eukaryota; Metazoa; Mammalia; Eutheria; Cervidae; Cervinae; NCBI_TaxID=9860;

SEQUENCE FROM N.A.
MEDLINE-99273269; PubMed-10341723;
Demmers K.J., Kaluz S., Deakin D.W., Jabbour H.N., Flint A.P.F.
"Production of interferon by the conceptus in red deer Cervus

Fertil. 115:59-65(1999)

elaphus."; J. Reprod.

REVIEW

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                                                                                                                     145
                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                       type
                                               64
                                                                                                                                                                                                                                                                                                                                                                                                               interferons.";
NA 5:345-356(1986).
A 5:345-356(1986).
I- FUNCTION: PRODUCED BY MACROPHAGES, IFN-ALPHA HAVE ANTIVIRAL
ACTIVITIES. INTERFERON STIMULATES THE PRODUCTION OF TWO ENZYMES
A PROTEIN KINASE AND AN OLIGOADENYLATE SYNTHETASE.
I- SIMILARITY: BELONGS TO THE INTERFERON ALPHA, BETA AND DELTA FAMILY.
                                                                     8
                                                                                               NIFAIFRODSSSTGWNETIVENLLANVYHQINHLKTVLEEKLEKEDFTRGKLMSSLHLKR
                                                                                                            -CLKDRNDFGFPQEVFDGNQFRKPQAISAVHETIQ
                                               LLGFLQRSSNFQCQKLLWQLNGRLEYCLKDRMNFDIPEEIKQLQnFsKEDAALTIYEMLQ
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                       4:
Length 184
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                        Indels
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dae; Equus.
                       54;
                                                                                                                                                                                                                                                                                                                                                                                         R., Swetly P.;
in Escherichia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BY SIMILARITY.
BY SIMILARITY.
FC087F46F11C68EC
          1.1e-14
DB 1;
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                                                                                                                                                                                                                                                                                update)
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                                                                                                                                                                                                                                                                                                                             Equidae;
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                                                                                                                                                                                                                                                                    update)
                       Mismatches
                                                                                                                                                                                                                                  184
Score 257;
Pred. No. 1
                                                                                                                                                                                                                                                                                                                   Craniata;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PS00252; INTERFERON_A_B_D; 1. Antiviral; Multigene family;
                                                                                                                                                                                                                                                      05, Created)
05, Last sequence up
10, Last annotation
                                                                                                                                                                                                                                                                                                                              Perissodactyla;
                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
MEDLINE-87053170; PubMed-3022999;
Himmler A., Hauptmann R., Adolf G.R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HSSP; P01563; 2HIE.
InterPro; IPR000471; Interferon_abd
Pfam; PF00143; interferon; 1.
PRINTS; PR00266; INTERFERONAB.
ProDom; PD000550; Interferon_abd; 1
SMART; SM00076; IFabd; 1.
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YFQRIALYLQEKKYSPCAWEIVRAEIMRSF
                                                                                                                                             YYGRILHYLKAKEYSHCAWTIVRVEILRNF
                      28;
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29.4%;
36.0%;
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20860
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D24912; IVHOA4.
                       Conservative
                                                                                                                                                                                                                                  STANDARD;
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            Similarity
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(Rel.
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184
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P05006;
13-AUG-1987
13-AUG-1987
01-MAR-1989
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SIGNAL
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DISULFID
SEQUENCE
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PROSITE;
Query Match
             Local
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            Best
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Martal J.L., Chene N.M., Huynh L.P., L'Haridon R.M., Reinaud P.B.,
Martal J.L., Chene N.M., Huynh L.P., L'Haridon R.M., Reinaud P.B.,
Guillomot M.W., Charlier M.A., Charpigny S.Y.;
I'IFN-tau: a novel subtype I IFNI. Structural characteristics,
non-ubiquitous expression, structure-function relationships, a
pregnancy hormonal embryonic signal and cross-species therapeutic
potentialities. ";
Biochimie 80:755-77(1998).
LEUNCTION: PARACRINE HORMONE PRIMARLY RESPONSIBLE FOR MATERNAL
RECOGNITION OF PREGNANCY. INTERACTS WITH ENDOMETRIAL RECEPTORS,
PROBABLY TYPE I INTERFERON RECEPTORS, AND BLOCKS ESTROGEN RECEPTOR
EXPRESSION, PREVENTING THE ENDOMETRIUM. THIS RESULTS IN THE
CORPUS LUTEON OF THE PULSATILE ENDOMETRIAL RELEASE OF THE LUTEOLYTIC
CORPUS LUTEON (LUTEOLYSIS) AND THERREPORE A RETURN TO OVARIAN
CORPUS LUTEON (LUTEOLYSIS) AND THERREPORE A RETURN TO OVARIAN
CORPUS LUTEON (LUTEOLYSIS) AND THERREPORE A RETURN TO OVARIAN
PROGESTERONE SECRETION, WICH STIMULATES THE SECRETION BY THE
CONCESTERONE SECRETION, WICH STIMULATES THE SECRETION BY THE
CONCESTERONE SECRETION, WICH STIMULATES THE MONTHLY AND
PROGESTERONE SECRETION, WICH STIMULATES THE MONTHLY AND
PROGESTERONE POTENCY CONCURRENTLY WITH PARTICULAR WEAK
CONCESTIONS IN SUMMARY, DISPLAYS PARTICULARLY WEAK
CONCESTIONS IN SUMMARY, DISPLAYS PARTICULAR WEAK
CONCESTIONS. HIGH ANTILUTEOLYTIC ACTIVITY AND IMMUNOMODULATORY
PROMETERS IN CONTRAST WITH OTHER IENS, IEN-TAU IS NOT VIRALLY
FUNDITIONS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    . SUBCELLULAR LOCATION: SECRETED INTO THE UTERINE LUMEN.
-!- TISSUE SPECIFICITY: CONSTITUTIVELY AND EXCLUSIVELY EXPRESSED IN THE MONONUCLEAR CELLS OF THE EXTRA-EMBRYONIC TROPHECTODERM.
-!- DEVELOPMENTAL STAGE: MAJOR SECRETORY PRODUCT SYNTHESIZED BY THE CONCEPTUS DURING A VERY SHORT PERIOD IN EARLY PREGNANCY.
-!- MISCELLANEOUS: IFN-TAU GENES ARE INTRONLESS. THEY EVOLVED FROM IFN-OMEGA GENES IN THE RUMINANTIA SUBORDER AND HAVE CONTINUED TO DUPLICATE INDEPENDENTLY IN DIFFERENT LINEAGES OF THE RUMINANTIA.
THEY ENCODE FOR PROTEINS VERY SIMILAR IN SEQUENCE BUT WITH DIFFERENT BIOLOGICAL POTENCY AND PATTERN OF EXPRESSION.
-!- SIMILARITY: BELONGS TO THE INTERFERON ALPHA, BETA AND DELTA FAMILY. IFN-ALPHAII SUBFAMILY.
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                                                        use by non-profit institutions as long as its content is in no modified and this statement is not removed. Usage by and for commentities requires a license agreement (See http://www.isb-sib.ch/annoor send an email to license@isb-sib.ch).
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NA 5:345-356(1986).
- FUNCTION: PRODUCED BY MACROPHAGES, IFN-ALPHA HAVE
ACTIVITIES. INTERFERON STIMULATES THE PRODUCTION C
A PROTEIN KINASE AND AN OLIGOADENYLATE SYNTHETASE.
- SIMILARITY: BELONGS TO THE INTERFERON ALPHA, BETA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A. MEDLINE-87053170; PubMed-3022999; Himmler A., Hauptmann R., Adolf G.R., Swetly P.; "Molecular cloning and expression in Escherichia
                                                                                                                                                                                                                                                     by Antiviral; Signal.

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        This SWISS-PROT entry is copyright. It is produbetween the Swiss Institute of Bioinformatics the European Bioinformatics Institute. There ause by non-profit institutions as long as i
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13-AUG-1987 (Rel. 05, Created)
13-AUG-1987 (Rel. 05, Last sequence update)
01-MAR-1989 (Rel. 10, Last annotation updat Interferon alpha-2 precursor.
Equus caballus (Horse).
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Mismatches
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InterPro; IPR000471; Interferon_abd.
Pfam; PF00143; interferon; 1.
PRINTS; PR00266; INTERFERONAB.
ProDom; PD000550; Interferon_abd; 1.
SMART; SM00076; IFabd; 1.
PROSITE; PS00252; INTERFERON_A_B_D; 1.
Pregnancy; Cytokine; Hormone; Antivirial
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Similarity 37.6%;
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                 EMBL; M14541; AAA30950.1; -.
EMBL; A15987; CAA01258.1; -.
PIR; B24912; IVHOA2.
HSSP; P01563; 2HIE.
InterPro; IPR000471; Interferon_abd.
Pfam; PF00143; interferon; 1.
PRINTS; PR00266; INTERFERONAB.
ProDom; PD000550; Interferon_abd; 1.
SMART; SM00076; IFabd; 1.
PROSITE; PS00252; INTERFERON_A_B_D; 1.
Cytokine; Antiviral; Multigene family; SIGNAL
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CHAIN
24 184 INTERFERON
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